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WHAT CHILDREN STUDY AND WHY

A Discussion of Educational Values in the Elementary Course of Study

BY

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PREFACE

WHY is the course of study in use in our elementary schools constituted as it is? Why are reading, spelling, arithmetic, grammar, and history taught the children, rather than knitting and shooting and guiding automobiles?

What particular gift has each of the conventional school studies to bestow upon the children, and hence upon society, as justification for its place in the curriculum and as compensation for the labor, the tears, the time of the students, and the care, the effort, and the financial expenditures of the community?

These are questions that should be answered by teachers, parents, and public officials, if the best results are to be obtained from the schools. But most teachers take the course of study handed to them from above and teach it perfunctorily, without much serious consideration of its reason for being or for its motive. Most parents accept the courses forced upon their children, more or less willingly, but with the vaguest notions of their meaning or motive. Most school officials accept the conventional curriculum inherited from the past and used by their neighbors and pass it on to their own schools, taking for granted that it is right.

In this book no attempt is made to trace the history of the curriculum. That I willingly leave to more

learned writers. But I have endeavored to give in plain, untechnical terms a few of the practical psychological and sociological reasons for teaching the subjects found in most of our elementary school curricula, and to state what should result, from their study, to the benefit of the children and of society.

In some cases, also, I have intimated methods that seem likely to aid in securing the desired results, but I have not attempted to discuss methods of teaching in detail. That has been well done by several writers already. However, I have it in mind, in the near future, to offer a book discussing methods more fully than the limits of the present work allow, basing such discussion upon the specific psychological and social functions of the various subjects studied, as outlined in this book.

C. B. GILBERT.

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WHAT CHILDREN STUDY AND WHY

CHAPTER I

The Course of Study as a Whole

It is the purpose of this book to discuss the Course of Study of our elementary schools, treating its different subjects and departments *seriatim* and in some detail. But as a preliminary to such particular discussion, it seems necessary to consider briefly the curriculum as a whole, as to its aim and general character.

The course of study in a system of schools, whether of a state, a county, or a municipality, serves a two-fold purpose: one economic, the other educational. Its economic function is the unifying of the schools. It is the cohesive force that makes of an aggregation of schools a system. The educational function of the course is to serve as a guide to the teachers in their work; for, unlike the ordinary college curriculum, it is not made by those who are to use it, and hence may not be departed from at will. These two main functions call for special characteristics.

1. THE ECONOMIC FUNCTION

First, the economic function: what sort of unity is desirable in a school system, and how may a course of study promote such unity?

Naturally, if the pupils in the schools are uniformly and exactly graded and daily tasks are prescribed for all the grades, the result will be uniformity, and uniformity is a kind of unity.

Is it possible to give due recognition to a desirable freedom for the teachers and to the varying needs of children coming from many kinds of homes, and at the same time to preserve necessary unity?

In any one of our larger cities, with its heterogeneous population, with the widely differing needs of black and white, foreign-born and native, children of millionaire and of ditch digger, those from homes of luxury and culture, where all the influences supplement the work of the school, and those from the abodes of poverty, vice, and ignorance, who are kept in school only through the force of law, — is it possible under such varying conditions to frame a single course of study that will properly regard the needs of all and do violence to none? Is there any wide field of knowledge, any single line of intellectual activities, of such universal adaptation that all may profitably spend time in their cultivation and pursuit? Even if such subjects of study can be found, is it well to attempt to require the same attainments in them of all children of all sorts? In other words, is it possible to frame a prescriptive course of study for New York or Chicago or Philadelphia, or even for a small city, that will not do violence to the needs, not only of many individuals, but of some whole classes of children, some entire schools? If it were possible to frame a course having this negative adaptation, is it desirable, or is it necessary to the preservation of proper unity in a system?

What Uniformity is Desirable. — What degree of uniformity in a school system is desirable or necessary to the preservation of unity?

1. It should be possible for every child to pass through all the grades of a system, from the lowest to the highest, without serious hindrance because of differences of subject matter taught, or of administration.

2. It should be possible for children changing their residences to go from one school to another without loss of grade or other embarrassment arising from differences in instruction. The good of the individual children requires this degree of uniformity.

3. It should be possible for supervising officials to judge of the efficiency of teachers according to some standard of attainment on the part of the pupils. It is not necessary, however, for this standard to be strictly uniform.

4. It is desirable, but not essential, that instructions given to teachers and aids furnished them for their work be of general service. This is more important in smaller communities than in very large cities, in which division of the supervising force and differentiation of function among its members are possible. These needs seem to indicate the natural limits of necessary uniformity in a course of study in a school system.

Differences in Administration Desirable. — It seems to me beyond question that there should be great differences in the course as administered in different schools, especially in large cities. The children of the poor foreigner, who hear no English in the home, who themselves are accustomed to speak a foreign tongue, whose knowledge of the English language is limited to a few incorrect or slang phrases picked up on the street, and

whose schooling is almost sure to be limited to the minimum required by law, certainly must have instruction different from that needed by children who have been accustomed from infancy to good English only, and who are reasonably sure to continue in school at least to the end of the public school course. With the same course of study, the knowledge acquired by these children is sure to differ greatly; and the desired end of intellectual growth by all, as nearly equal as possible, would be greatly facilitated by treatment adapted to their individual conditions.

Unity of Aim and Purpose. — The unity to be sought is one of aim and purpose, the development of each child into the best possible for him. Individual growth, rather than the knowledge of the same facts by all, is the end to be desired.

A Necessary Minimum. — A minimum must be fixed, necessarily, and this is not difficult. There *are* certain subjects so nearly universal in their adaptation that all children should pursue them. The differences should be mainly in the details of these subjects and in the methods of presentation.

The subjects a knowledge of which the experience of mankind has singled out as essential to such an education as the good citizen needs, are: Reading with its corollary, good literature; writing; the use of the prevailing language, with us, English; arithmetic; and history, especially of the student's own country; and of minor, though great, importance to all, the laws and phenomena of nature, and various manual and industrial arts, such as drawing and the use of tools. These should be in all elementary courses of study. But it by no

means follows that all students should be taught all these subjects to the same extent, or in the same manner. Their presence in a course of study insures unity. Freedom in their treatment, in the emphasis placed upon them, and in their correlations with one another, as suggested by the mental and social status of the pupils, gives the variety in unity which is to be desired.

Correlation Necessary. — A proper correlation of subjects, allowing the placing of stress upon this phase or that, is one key to the problem. For example, the children of very many immigrant families need, for a time at least, to recognize the fact that all other subjects must be subordinated to the study of the English language. That does not mean, however, that no other subject should be studied. The same subjects may be pursued by them as by other children, but with a change of emphasis. Language cannot be taught alone. It is the medium for the expression of thought. Hence "content" subjects must accompany the study of language and furnish thought for expression, else the instruction in language will be barren. Such "content" subjects are the great fundamental interests of humanity, the laws and phenomena of nature, the ideals, the occupations, and the achievements of men — that is, "nature study," history, literature, and the industries. But while all children should study these subjects, the emphasis and the portion of time given to each should vary as widely as do the children themselves.

Stress should be Varied. — In some cases the chief stress should be upon the "content" study itself, and this should be chosen with reference to the needs of the children. To those from poor and sordid homes,

literature and history, imparting ideals, should be made much of. To the children of well-to-do parents with aristocratic tendencies, human industries as exemplified in manual training exercises should be prominent as content studies. With other children, as indicated above, the form of expression itself should receive the chief attention. The need of each must be considered. It will not do to give brimstone and treacle to all because it may be good for some. A mechanical uniformity, regardless of local or individual conditions, not only wastes the time and energies of pupils, but prevents even reasonable equality of result in spiritual growth and in attainment throughout the system.

Course Adaptable.—A course of study, then, to secure unity to the system, need not be rigidly prescriptive. It should require that fundamental subjects be taught thoroughly in all schools, but should allow details of subject matter, the choice of material for elaboration and illustration and, in the main, methods of instruction, to be determined by local and individual needs.

Results Required. — The absolute requirement should be " results," as shown in the knowledge and power of the children, and these results should be determined, not by any narrow tests, but by standards of growth wisely and personally applied. These necessarily include steady progress by the children in fitness for life as it comes to them, and the acquisition of sufficient intellectual power and knowledge to enable them to meet the demands of what comes next, whether in school or out.

All children should acquire at least a reasonable minimum of knowledge of the accepted fundamentals, but not necessarily all the knowledge, or the same knowl-

edge, of those subjects that other children in the same or in other schools may possess, but merely that which is essential to progression. A pupil who cannot perform reasonably difficult problems in addition and multiplication is not qualified to work in interest, and if this power has not been acquired at the proper time, something has been wrong, because these subjects are fundamental in mathematics. But a knowledge of duodecimals is not essential to work in percentage, even if it comes before it in the book.

Course should be Rich in Suggestion. — In addition to stating in broad general terms the prescribed fundamental subjects, with their requirements for each grade, the unity of the system requires that the course of study be rich in *suggestion* as to detail, as to additional material, and as to the development of the different subjects. While mandatory instruction as to details of matter and of method are dangerous, not only to the freedom of the teacher, but also to the real spiritual unity of the system itself, suggestions as to these matters are promotive of both these desirable ends.

If the unity of the system is to be one of spirit and of aim, all means that tend to make clear the aim and to cultivate the proper spirit are helpful. The highest and best unity can be secured through freedom stimulated by suggestion and inspiration, never through force or prescription.

2. THE EDUCATIONAL FUNCTION

The educational function of a course of study is to serve as a guide to the teacher in his daily work. The characteristics that are required for the preservation

of the unity of the system are equally essential to this second function. There must be prescription as to fundamentals, freedom as to details and methods. The teacher needs to have requirements stated positively and clearly so that he may be sure of his ground and may qualify his children for progress without check or setback. The general phases of the subjects upon which his efforts are to be expended, and the results expected of his class, must be stated in unmistakable language, but in broad terms, the terms of unity rather than of uniformity.

Daily Programs Harmful. — The course of study should not give daily programs to the teachers of the different grades, even approximately. While these programs are of much importance, they are matters of detail to be worked out in every school by the teacher and the principal, according to local conditions. For example, among certain classes of children in our cities the power to compute seems to be almost hereditary, and the desired results can be secured with comparatively little effort, while the study of the English language and of history and civics needs a large share of the time. In other quarters the reverse of this condition is found.

Initiative to be Encouraged. — Moreover, prescription as to details of subject matter and of method and as to the daily program is injurious to the teacher and destructive of good teaching. Teachers who are fit for their places can attend to these matters better than the maker of the course of study, and they should not merely be allowed, they should be compelled, to do so for their own growth.

A cast-iron course of study is as destructive of teachers as the shoes worn by Chinese ladies are of their feet.

The school machine at its best constantly endangers the teacher's power of initiative, his most valuable mental possession. Hence every effort should be made to reduce this danger to the minimum. A premium, rather than the threat of disapproval, should be set upon originality that secures results in fresh ways. I have seen scores, hundreds, of potentially good teachers robbed of interest and of teaching power by the rigid requirements, in minor matters, of the course of study. These teachers, when deprived of this corselet and compelled to stand erect alone, to breathe freely and to act unstayed, have been dismayed and helpless, and have begged to be told again just what to do for each period of the day; and I have seen many forced into activity and made in the end strong, original, and enthusiastic teachers through being compelled to do their own thinking and planning.

Thus, for the good of the teacher, as well as for the unity of the system, a course of study should be rigid in its requirements as to results in the fundamentals, but should leave to the teachers its application and administration in particular fields.

It should, however, supply a great amount of material for choice and should suggest method, illustration, and correlations, all *in the spirit* of the system. It should abound in explanation, suggestion, and inspiration — in all sorts of genuine helps; but they should be stimuli to independent effort, not predigested food to take its place.

Course not too Easy to Comprehend. — A course of study should not be too easy of comprehension. It should require the teachers to study the course itself, in order to comprehend it, and to study outside the course

for help in administering it. A course that a teacher can keep in his desk and follow satisfactorily by occasional references to it is a feeble course indeed.

A good course necessarily rests upon science and philosophy, both psychological and sociological, and should continually refer the teachers to these sources for an explanation of its principles, and should require of them professional research and study, — for such study is the teacher's vital breath.

A course of study should also demand for its administration a fair amount of general culture, and should make necessary constant excursions by the teacher into the fields of science, history, and literature, for these excursions mean personal growth.

Body of Knowledge and Range of Activities. — As education consists in growth, through nutrition and exercise, that is, through the acquisition of knowledge and through expression — receiving and producing, import and export — the course should make provision for both these processes. It should provide or suggest *a body of knowledge and a range of activities*. The former calls for knowledge on the part of the teacher, the latter for the free exercise of judgment and initiative.

The field of prescription is mainly limited to the body of knowledge and indeed to the main and fundamental facts within it.

The field of suggestion and inspiration is largely in the expressive work of the school. As expression makes knowledge vital, the range of activities is the vitalizing part of the course of study. It is not enough that a course state that the work in history for the fifth grade shall cover so many pages of such and such books, or that it

shall include certain named topics; it should both suggest more topics than can be pursued, and should throw as many side lights as possible upon the subjects; should indicate sources of information, and should point out possible correlations with other branches of study; it should suggest methods of approach and various means of illustration. Especially should it show how impressions may be deepened and clarified by the employment of the various arts of expression, as the writing of stories and representation with pencil or brush and by construction. In short, it should not only indicate the subject matter to be taught, properly classified, but should also open the eyes of the teacher to all possible means for making the teaching effective, that, his imagination being stimulated, he may choose or originate the best available instruments and methods. If, however, these things are prescribed, that very fact makes them mechanical and impairs or destroys their efficiency.

Here is the opportunity of the superintendent, in making the course, to do his highest work, and for the teacher, while following it, to do his highest work.

Résumé. — A course of study has two main purposes: to preserve the unity of the school system, and to serve as a guide to the individual teacher. For both these ends it should be mandatory and prescriptive as to fundamentals, but broad, free, suggestive, and stimulating as to details and methods.

The course should require the teacher to study, both for a comprehension of its principles, and for culture.

It should be based upon a body of knowledge, and should indicate a range of activities. Prescription belongs chiefly to the former, freedom to the latter.

But throughout the course, the spirit and aim must be manifest. If the aim is to perfect the machine, to enable the children to obtain " promotion " by passing a formal examination, that should be made evident at every step, so that the teacher may direct his efforts successfully and waste none on iridescent dreams. But if the aim is really the growth of children individually into knowledge, power, and civic righteousness, the course of study should make that truth plain at every step, that the teacher may be inspired by the high aim, and may take account of the individual status and needs of the children.

CHAPTER II

Reading

1. Function of the Reading Lesson

The Value of Reading. — Doubtless arithmetic in its simpler processes satisfies a more elemental human need than does reading. The illiterate often can perform accurately the operations upon numbers required for the commoner business transactions. Indeed they must do so if they are to enter into even the simple economic relations necessary to making a living. Whereas reading, though vastly useful, is not essential to such relations. This is further shown by the fact that not so many years ago the great majority of successful men, even the very rich and powerful, could not read at all. But manifestly they could and did compute.

Notwithstanding this fact, it is still true that reading makes possible the satisfaction, certainly of higher human needs, and probably of a larger number, than does arithmetic. Consider the limitations of him who cannot read. How small is his field, how narrow his horizon, how restricted his outlook. The limits of his vision and the length and strength of his legs bound his world. He knows what his senses tell him immediately, and the only supplement to his knowledge derived from the actual contact with things comes through the spoken word, the uncertainties of oral recital. Without the art

of recording thoughts in symbols and the twin art of translating the symbols again into thoughts, man has no past but a vague and brief shadow, and no present beyond the encircling horizon observed from the near-by hilltop.

But teach him to read, and lo! his horizon is lost in infinity. All the past is his, and all the present. He may enter at once the glorious democracy of letters. The great of all ages, poets, sages, seers, may be his friends and associates. He may pace the academe with Plato, may listen to the inescapable questions of Socrates. The verses of Hafiz, the gentle speech of Buddha, the laws of Moses, the songs of Homer, of Dante, of Goethe, and the dramas of Shakespeare, — all are his. He may live over again the wanderings and sacrifice of Abraham, the conquests and defeats of Cyrus and of Cæsar, of Charlemagne and of Bonaparte, of Nelson and of Washington, may enter into the struggles and triumphs of Galileo, of Newton, and of Humboldt, of Columbus, of Magellan, and of Cortez, — and all because he can read.

Truly, not even gold, that magical key, can open the doors to so many treasure houses, so many gardens of delight, such a paradise of choice spirits, as this common art of reading, the chief of all arts; and this wonderful key is offered to every boy and every girl at the price of a little toil.

Unfortunately, many who are given the key never use it to possess themselves of the treasures within their reach. Why is this? What can the schools do to bring a larger number of children into full and conscious possession of their noble heritage? How shall reading

be taught so as to secure its higher as well as its lower ends?

Aims of the Reading Lesson. — What are the ends to be aimed at in the reading lesson? They are: (1) Ability to get the thought conveyed by the symbols found on the printed page, accurately and speedily. (2) Ability to judge the values of what is read, a discriminating taste, and a genuine love for good literature. This involves a considerable knowledge by the children of such literature as properly falls within the field of their interest and comprehension. (3) Ability to read aloud agreeably and effectively. (4) The power to think should be cultivated by the process of learning to read.

2. LEARNING TO READ

Let us consider learning to read, what it is, and some of the commoner methods of teaching the art, and also how to make accurate and rapid readers.

Nature of Reading. — Reading is interpreting symbols, imaging the ideas and thinking the thoughts symbolized. The complexity of the symbolism employed sometimes causes confusion in the minds of teachers, and is responsible for over emphasis upon the less important features, producing faulty methods and poor results. A single letter stands not for a thought or an idea, but for a sound, sometimes for any one of several different sounds, according to the relations in which it occurs.

Meaning of Letters. — The written word has two distinct phases: it stands for a synthesis of the various sounds represented by the different letters and it is the symbol of an idea. For example, the letters *r*, *u*, *n*

represent not ideas, but different sounds, effects produced upon the auditory nerve by waves of air, set in motion by certain muscular movements of the vocal organs. But these sounds heard in quick succession produce in the mind an idea or image of an action — *running*, having naturally no relation whatever to the sounds.

Moreover, the sight of the letters that represent the sounds produces in the mind the same image that hearing the sounds causes. The written word *run* becomes the representative of the spoken word *run*, but upon observing the written word the trained mind forms an immediate image of the idea *run*, without, at least consciously, thinking of the spoken word through which it has come to symbolize the idea. So we say justly that the written word is the symbol of an idea, although in its origin it is a step removed from the idea.

Spoken and Written Words. — This relation of the written symbol of an idea to the spoken word that represents the same idea is comparatively modern. The spoken word necessarily preceded the written word. But the first graphic symbols employed had no relation whatever to the sounds of the spoken words that stood for the same ideas. The origin of the oral names of ideas is enveloped in mystery and told only in myth. The first graphic symbols were pictures, rough representations of objects or of actions, made with chisel or improvised brush; and the earliest typical characters having a general significance, such as the cuneiform, were merely conventionalized pictures and bore no relation to the sound of the word as spoken.

The earliest alphabet, on the other hand, was an at-

tempt to represent graphically the uttered sounds and so to bring into harmony the oral representations of ideas and their written symbols.

The Alphabet. — Naturally, in order to make an alphabet, a list of arbitrary characters which should represent the sound elements of words, it was necessary first to analyze the spoken word into its sounds. For not only did the spoken word precede the written word, it preceded any conscious consideration of its sound elements. To the makers of the first alphabet the word existed already made and the first step was the analysis of its sounds. Characters were invented to represent these and then names were given to these characters. Then characters were put together in the order in which they were sounded in the spoken word, to make the written word.

I have treated this phase of the subject so fully, not for the sake of elaborating upon the obvious, but, if possible, to throw a little light upon the various methods of introducing children to the greatest of the arts, advocated, often with so much warmth, as *nostrums* or *panaceas*.

Learning to Read. — Learning to read, then, is learning to translate the symbols found upon the printed page into images representing ideas. To the ready reader the sight of the printed word gives the idea; this step is immediate, the spoken word not entering into the process. The beginner may make the step either directly, or with the assistance of the spoken word (either heard or imaged), according to the quality of his mind and sometimes according to the method by which he is taught.

The notably ear-minded child, in most cases, will probably image the sound, and the sound heard will usually aid his visualization of the word; while the markedly eye-minded child will go more readily from the symbol to the idea directly, and the introduction of the sound element at an early stage is to him confusing rather than helpful. Necessarily, stress put upon "phonics" or upon "thought" by the teacher at the outset of a child's reading career will affect his method of grasping the thought from the symbol.

Analysis and Synthesis. — Whatever the method of first initiating a child into the mysteries of reading, sooner or later he must master the entire process and all the relations. He must be able to transmute sight into sound; upon seeing the symbol he must in imagination hear the word spoken and he must be able to dissolve it into its sonant elements. Again, he must be able at the sight of letters, standing for known sonant elements, to unite in imagination these known elements in new relations forming other words. That is, from an analysis of *run* he must get the sounds *r-u-n* as represented by the letters *r*, *u*, and *n*, and from this knowledge he must be able to read at sight *u-r-n*, *urn*. And always finally he must be able to pass at sight from the symbol to the idea without the mediation of the imaged sound.

This elaborate analysis, however, need not be introduced at the beginning of a child's learning to read. Indeed, its very complexity is one of the arguments against such early introduction. This will be more fully discussed later under the head of method.

One other phase of this subject needs elucidation at this point.

The Eye-minded and the Ear-minded. — The late Dr. William T. Harris, that profound educational logician, used to say that, in learning to read, a child from being ear-minded becomes eye-minded. I cannot but think that is an extreme statement. A child before he learns to read is by no means solely, nor even chiefly, an ear-minded being. Nor is the only effect of learning to read an increase of eye-mindedness. The eye feeds the mind of a normal child from early infancy beyond all possible calculation. Moreover, learning to read, while it opens a whole new field to the mind through the eye, at the same time greatly enlarges the ear's contribution to the mental content.

The constant overlapping of the senses, the borrowing by one sense from another, by which all are enriched through common contributions, is exceedingly influential here. The sight, while itself gaining new power, also stimulates and enriches the hearing. The constant necessary interchange by the two senses in the process of reading brings to each a gift from the other.

So while Homer's contemporaries *heard* Homer's poems, we, reading them, by this transfer of intelligence enjoy a similar pleasure, because the written word carries us back to its source, the spoken word, and in mind we hear the "sounding sea" and "the twang of the silver bow." Indeed, without this subconscious influence of hearing upon sight, rhythm and rhyme would have no meaning to the silent reader. Poe's "Bells" would be silly and all poetry would be absurd, except when read aloud.

Dr. Harris doubtless had in mind the field of language. Before learning to read a child is ear-minded as to words.

He knows them only as he hears them. After learning to read he knows them also as he sees them. But his ear-mindedness is not thereby diminished, or should not be. Eye-mindedness is added to it, not substituted for it. And as the world's valuable treasures of knowledge are locked up in books and open to the eye alone, this is the addition of a whole world.

3. THE DEVELOPMENT OF TASTE

The Thought Element in Reading. — Obviously the primary purpose of the reading lesson is to teach the child to get the thought from the printed page, and all other elements, as the study of sounds or the names of letters, that enter into the instruction are at most but accessories and aids to the single purpose of the lesson. And they may be ignored for the present, while we consider a more important element.

Since reading is thinking the thoughts expressed by the symbols, even in the very earliest beginnings of learning the art, it stands to reason that the thought to be read should be worth the child's thinking. I do not need to say that to think unworthy or idle thoughts is degrading, and that when this is done under strong impulse, as in learning to read, with the mind intensely active and working at its best, the effect is thoroughly bad, and the habitual attitude of mind toward the act of reading thus produced is unfortunate.

Of course, school readers do not contain evil thoughts, but many of them do contain silly, idle thoughts of no value to the children. This is particularly true of many of the "primers" and "first readers" in common use, and especially, and almost of necessity, of those made to

exploit some favorite "method." The much-derided "See the ox go up" primer has given place to the primer of "I see an ox."

If every reading lesson is to be a thought lesson, everything read should of course contain worthy thought. It is not necessary to fill primers with history or geography or philosophy, but they should contain statements that mean something to the children and something worth while, — facts or fancies that belong to their world, — and they should contain nothing else. There is abundance of available material in the natural activities of children and in the delightful field of children's lore to equip any primer builder. Reading books, from the highest to the lowest, should satisfy the two main desires behind all voluntary reading, getting information and finding enjoyment and inspiration. The latter is really of more importance than the former. The habit of reading for information is much more likely to be stimulated out of school than that of reading for pleasure, especially elevated and elevating pleasure. Children should come to look upon a book as a treasure house, to be approached with glad anticipation. This mental attitude can be cultivated only by presenting books that both gratify and develop literary taste.

The school reading book gives to the majority of children their only introduction to genuine literature. Literary taste, ability to enjoy the best in this treasure house, if not cultivated through the reading lesson, will never be cultivated. Hence it is little less than criminal to waste this precious opportunity on any material but the best that the children can appreciate.

If the children of a school are found to be reading

"Battered Bill, the Bloody Broncho-Buster," or "The Poisoned Gum Drop, or the Candy Woman's Revenge," it is an indication that the teaching of reading has not filled its full measure of possibility; a taste for better literature has not been developed. The reading matter may have been merely combinations of words to illustrate a "method." It may have been serious literature beyond the present capacity of the children, or it may have been fragmentary and dissociated excerpts from good literature, insufficient to create a standard or to develop a desire to read more of like character. Even if the books contain good selections in the form of literary wholes, they may have been treated merely as reading lessons to the exclusion of their higher ends, — for all these are causes of lack of love for good literature.

The Reading Lesson a Study of Literature. — The reading lesson especially, of all the lessons in the day's program, should be not a task but a pleasure. It should always be reading literature to get at the thought and the spirit of what is read, — in manner as nearly like reading out of school as possible, only more thorough and more appreciative. It should always be a careful and sympathetic study of the selection. Moreover, the children while being introduced to the delights of the author whose production is read should be tempted by suggestion to read more from the same author at home. The teacher of reading should be in close alliance with the public library, if such an institution exists. The establishment of libraries in schools is fortunately a rapidly growing custom. Such a library of well-selected books of general literature, adapted to the needs and capacities of chil-

dren, makes possible the development of the reading lesson into a literary feast.

Reading Poetry. — It is especially important that poetry be carefully, persistently, and sympathetically read and studied in school. Teachers sometimes skip the poetic selections in the reading book because either they or the children "do not like poetry." Poetry is the highest form of literature, and for that reason is "caviare to the vulgar." More than any other form it needs to be interpreted to the children. They need to be led to see that poetic expression is not only the most beautiful, but is also the most effective and forceful, of all forms of literary art. Much emphasis should be laid upon the study of figures of speech, of rhyme and rhythm. The teacher, if a good reader (and the teacher should always be a good reader), should read aloud to the school choice poetry, that the children may catch from the modulated voice that undefinable, subtle musical quality which is the spirit of true poetry.

The Mechanics of Reading Necessary. — Of course the elemental object of teaching reading must not be lost sight of. The children are, first of all, to learn to read, to acquire power in the interpretation of the printed symbols of thought. Especially in the lower grades, the mechanics of the subject, the recognition of words and the art of naming new words by analyzing them into their sonant elements, must be rigorously taught, to make possible the study of the literature read. But the two processes should go on side by side. They are reciprocal. If the literature read appeals to the children, they are easily induced to perform the mechanical drudgery necessary

to its mastery. If it does not appeal to them, their learning to read becomes an arduous task and they look elsewhere for their pleasurable reading.

Reading in Higher Grades. — In most schools reading is taught throughout the primary grades rigorously, even if not wisely, but too often in the higher grades it is neglected. It is not uncommon to find daily programs in grammar schools with no place for reading. Here is obviously the very best place for developing taste, because the children are more mature and better capable of appreciating good literature. Here, especially, the reading should be of literary wholes, unmodified by the over anxious editor. The grammar school pupil does not need to have his mental food predigested.

Grading Reading. — The principle of grading employed in making too many readers is wrong. Readers above the second or third should be graded according to thought rather than words. If the subject matter is comprehensible and interesting to the children, they will master the words even if they are "hard." But easy words do not make easy reading of selections whose thought is beyond the children.

This points to two opposing errors found in some present-day reading books. In those of one kind, good literature is "written down" to the capacities of the unhappy children. I have even known such delightful and childlike selections as Irving's "Rip Van Winkle" and "Legend of Sleepy Hollow" to be made over for the children. This is little less than literary murder; nor is it necessary, for the reason given above. The other error is in giving profound writings to children because the words are simple. Gray's "Elegy in a Country Churchyard" I

have seen in a reader for intermediate grades, where it is manifestly out of place. The whole thought and spirit of the poem require mature minds for their appreciation. The elegy, from its very nature, is unfit for young children, and Gray's is no exception. One might as well give them " In Memoriam," " Lycidas," or " Adonais." The study that is put upon such selections by the very young simply spoils them for later enjoyment, and drives the pupils to the Nickel Horror. On the other hand, many of Shakespeare's plays make admirable reading matter for the grammar school. The vital interest in the story and the dramatic action carry the pupils over the difficulties of the vocabulary.

The principle is plain. Give children the very choicest literature that they can appreciate and enjoy, but don't force them, and above all don't spoil choice literature by making it over for reading lessons ahead of its turn. Wait till the children are ready for it as the author made it.

The worst instance of this sort of desecration is rewriting in simple prose the story of a choice poem. The story is but one element of the poem and usually is the least important, except as a skeleton. But it is necessary to the poem as a whole. There are good stories enough for children of all grades, written in suitable language, without filching the hearts out of choice poems. Even great authors cannot write over great poems successfully. Though children in the grammar grades love to read Shakespeare, as a rule they do not care for Lamb's " Tales from Shakespeare."

Give children an abundance of good literature as it came from the pens of genius, in wholes and unspoiled.

4. READING ALOUD

The third of the functions of the reading lesson is to give the ability to read aloud to the edification and enjoyment of listeners, to reproduce orally, with exactness in word and in spirit, the thought expressed on the page.

In the school reading lesson, especially in the earlier years, reading aloud is a necessary part of the exercise, the proof that the pupil can read. In later years it is a fine art too often ignored.

The Nature of Reading Aloud. — Reading, it will be recalled, is getting the thought from the symbol, either immediately upon observation, or mediately through imaging the sounds of the spoken word. Reading aloud is going a step farther and uttering the words after the thought has been grasped. The distinction needs to be made between merely calling the words phonically and reading them. To utter the sounds *r-u-n* in quick succession as the word *run* while thinking merely of the sonant elements is not to read *run*. Reading involves conceiving the idea *run*, and oral reading means speaking the word *run* as expressive of the idea. This is important as having a distinct bearing upon the method of teaching the art, as will be evident later.

Elements of Oral Reading. — Oral reading involves, on its mechanical side, breathing, vocalization, enunciation, and pronunciation. In the primary classes breathing and vocalization may be taken for granted. Correct breathing and the production of pure tones are of course important, but there is little time for their consideration in the ordinary primary school. As a rule, too, the

breathing and the voices of children are more natural and hence better than those of adults.

Enunciation and Pronunciation. — But enunciation and pronunciation must receive stress from the first. By good enunciation is meant the distinct utterance of the various vowel and consonant sounds involved in speaking a word. By good pronunciation is meant the utterance of the word as a whole correctly, with proper accent, as determined by standard authorities. To "slur" letters, to give incorrect or indistinct sounds to letters, to run them together, — to say *bein'* for *being;* or *p'r'aps* for *perhaps; gentlemun* for *gentleman; New Yawk* for *New York; woild* for *world; histry* for *history; jogerphy* for *geography,* — these are common instances of bad enunciation.

"*Watchuthinknof?*" looks *Slavic,* but it is quite common American.

To say *Euro'pean* for *Europe'an, haow* for *how, noo* for *new, threw* for *through, colyum* for *column, hor'izon* for *horiz'on, interes'ted* for *in'terested,* is to pronounce incorrectly.

These two classes of errors are sure to show their heads continually in school, and must be hit whenever they appear; but the reading lesson affords the best opportunity for dealing with them systematically. They arise from various causes, chief among which is habit acquired in the home and on the street.

Faulty enunciation is often due to some defect of the vocal organs, and faulty pronunciation to ignorance pure and simple. To correct these errors should be a principal object of the reading lesson, because they are serious defects, not merely in reading, but in all utterance, and

are likely materially to affect future success among men. The world over, the method of utterance is one of the accepted standards of cultivation.

Correcting Faulty Enunciation. — How may faults of enunciation be removed? In most cases, only by persistent efforts to secure correct utterance, and the substitution of good habits for bad. In case of physical defects the assistance of a surgeon may be required, though often a simple course of exercises will furnish all the remedy needed. Stuttering, for example, is usually due to a diseased or overstimulated nervous system, and except in extreme cases can be helped or even cured by enforced deliberation of utterance, regularly persisted in. Difficulty in uttering distinctly particular letters, as *s* or *l*, can usually be overcome by steady, deliberate practice in uttering them. Some instruction at first may be needed as to the proper disposition of tongue, teeth, or lips to produce the correct sound.

Of the bad habits, the most common, and the most disastrous as well, is that of slurring letters, both vowels and consonants. Few adults, even of liberal education, utter their words clearly, through to the finish. We have no time to enounce. We telegraph our message, omitting every sound not absolutely required to give its meaning. Such exercises as reading or reciting words, verses, or sentences with great deliberation and with over emphasis upon all sounds are helpful. Drill upon the utterance of such words as *in-di-vis-i-bi-li-ty*, giving the short sound to *i* in each syllable, is valuable, as is the use of the old enunciation puzzles, as "A big black bear bit a big black bug," "Round the rugged rock the ragged rascal ran," "Peter Piper picked a peck of pickled pep-

pers," with the good old "Theophilus Thistle, the celebrated thistle sifter, while sifting a sieve full of unsifted thistles, thrust three thousand thistles through the thick of his thumb," repeated in various forms. The reading or reciting of poems or prose selections markedly onomatopoetic makes good drill in enunciation; for example, Poe's "Bells," Montgomery's "Arnold von Winkelried," Byron's "Destruction of Sennacherib," Southey's "How the Waters Come Down at Lodore," Tennyson's "The Splendor Falls," Dryden's "Ode to St. Cecilia," Dickens's description of the locksmith in "Barnaby Rudge," Chap. XLI.

The selections for practice should be made with reference to the particular defects or habits to be remedied. It is well to begin with the younger children by reading to them short selections that bring out prominently certain sounds asking them to indicate those sounds and to reproduce them. For the ear is frequently the cause of bad enunciation. It does not always distinguish sounds and must be trained to hear accurately.

I recall an argument with a lady, whose whole life had been spent in New York City, over the sound of the letter *r*. She had the local habit of slurring it or of dropping it altogether. But she insisted that she did pronounce it. Finally I discovered that apparently her ear could not perceive the ordinary sound of *r* at all. She could not, for instance, distinguish between *are* and *ah*, when spoken. Only over emphasis and a prolonged trilling of the sound enabled her to perceive it.

A distinguished bishop tells of visiting an English laborer's family at dinner time.

The principal article of food was some delicious York-

shire ham. The laborer's son, after consuming a generous portion, asked for more, and this conversation ensued:

Boy — " Dad, H'Id like some more 'am."

Father — " You mean *'am*, my son."

Boy — " That's wot I said: I said 'am."

Father — " No, you said, *'am*."

Mother (aside to Bishop) — " 'Ear 'em. They both think they said *'am*."

Although a thoroughly bad enunciation is perhaps seldom wholly corrected, careful instruction, much practice, and never ceasing insistence, especially in the reading lesson, can accomplish much.

Correcting Faulty Pronunciation. — Faulty pronunciation, especially if taken early, can be remedied much more easily. As has been said, in many cases it is due to ignorance. This requires merely acquaintance with the correct standard. In other cases it is habit, which calls for attention and insistence. Usually, too, faulty pronunciation is limited to a comparatively few words.

The greatest difficulty is likely to be provincial pronunciation, due to customs prevailing in localities and sometimes in whole regions. Such are the New England *yew* for *you*, *hev* for *have*, *stupenjus* for *stupendous*, *goom* for *gum*. The Pennsylvania *căăow* for *cow*, *mă* for *mä*, the Southern *ah* for *I*, the Irish *charac'ter*.

The difficulty with this class of errors is not merely fixed habit, but inability to distinguish the sounds by the ear. Even teachers, working in the locality where they have been brought up, cannot detect the familiar errors of pronunciation committed by the children, but are guilty of them themselves. It is only by a careful

training of the ear and a constant study of standards that errors of pronunciation, either provincial or personal, can be eradicated. One of the best means of correcting our own faults of sound-perception and of sound-production is to listen closely to cultivated public speakers, and especially to good actors, people whose business it is to be right in these respects. In case of doubt always consult a dictionary.

The two faults of speech above mentioned as common in oral reading are all that can be attended to profitably in the earlier primary grades while the children are mastering the symbols. But false modes of breathing and bad qualities of voice must be remedied before reading aloud as an art and as a source of pleasure is possible.

These two subjects belong so largely to the specialist that I shall not attempt to treat them at length, but shall only give a few suggestions as to exercises that may be employed in the schoolroom in connection with the reading lesson. These can be introduced into the intermediate grades with advantage.

The breathing should be full and deep. Breathing exercises, filling the lungs to the bottom, just before reading, are helpful. To begin a sentence with the lungs nearly empty necessitates an early break in the reading. The breath should be taken in through the nostrils. Practice in deep breathing through the nose and giving out the breath very slowly through the mouth, clearly vocalized, allowing no breath to escape without producing tone, if repeated regularly, will greatly improve the breathing of a class while reading.

The production of good tone is really easier to secure

than good breathing. The common faults of tone in school reading are, among the boys, a hard and unnatural tone and excessive nasality, and among the girls, high pitch and an ear-splitting, shrill quality. Both boys and girls talk, if they do not read, too loudly and noisily. This fault continued to adult years and intensified has made the "American voice" justly an object of unpleasant comment.

How can we get soft, tuneful, clear voices? Only through much practice and continued insistence. In the first place the teacher's voice should possess these qualities, a condition, alas! seldom fulfilled. Children unconsciously imitate. A noisy teacher makes a noisy school.

It is essential to avoid shouting in all exercises. Make plain the difference between force and noise. Practice whispering to a distance. Especially have much reading and reciting of literature, calling for the quality the opposite of the one to be corrected, as, for a harsh voice, lullabies, such as "Sweet and Low," "O, hush thee, my Baby"; for a high-pitched, shrill voice, "By Nebo's lonely mountain," or "Not a drum was heard"; for a nasal voice, Byron's "Apostrophe to the Ocean," "Roll on thou deep and dark blue ocean, roll," or Carthon's "Apostrophe to the Sun," "O thou that rollest above, round as the shield of my fathers." In all cases try to have the voice reflect the sentiment. These are merely suggestive exercises for correcting glaring errors of vocalization.

The Art of Reading Aloud. — The art of reading aloud, now so nearly obsolete, is one of the most generally attractive of all the arts. It is especially effective for

poetry, oratory, fiction, and dramatic writings. Pure literature, interpreted by a genuine and sympathetic artist, shares with song, "Music married to immortal verse," the honor of being the most human and the most divine of arts.

> "And lend to the rhyme of the poet
> The beauty of thy voice."

CHAPTER III

Reading

METHODS OF INSTRUCTION

It is not the aim of this book to discuss methods very much in detail. Indeed, the term "method" as used in teaching has fallen into a certain disrepute, because it has been badly misused, and mere devices, which usually should be left to the ingenuity of the teachers, have been heralded as "methods." In this book the term "methods" always means simply a way of doing things, based upon principles.

There is a Best Way. — Necessarily there is a best way of doing everything that is to be done, but not a universally best way. The best way for me may not be the best way for you, and the best way for me to-day or with Johnny Jones may not be the best way to-morrow or with Maggie Brown.

Yet there are principles underlying all methods which may not be violated with impunity. Variation is possible in the application, but not in the principle.

The first thing to consider in determining the method of teaching any subject is the purpose of teaching it, — its place in the economy of education. That, settled, determines the standard by which all methods may be measured.

The Proper Bases. — The next things to consider are the nature of the subject, — its meaning and its logic, — and the laws of growth of the minds of the individual

learners, especially as related to the subject under consideration; for an example, how can the pupil best attain the end aimed at through the study of language, considering the nature of language and his mental state regarding it?

Psychology or Logic. — Here we come upon the old question: Shall psychology or logic determine the method of teaching a subject? Shall the nature of the subject or the nature of the child be the dominant influence? Shall the method of nature study, for example, be for the development of the child's powers of observation, discovery, and reasoning, or shall it be for verifying the classifications of science?

I once heard a schoolman say, while we were watching a class of children studying beetles, "To begin the study of the beetle at the wrong end is a pedagogical crime." I should say that to try to make the child see the beetle in any other than the natural way of seeing is a pedagogical crime. The order of procedure is determined by his mental state and his opportunities for observation and not by the shape of the bug. This principle applies in all teaching, whatever the topic. The child must learn as he can. Any attempt to force or to change the processes of his mental action results in waste or disaster.

Must vary with Age. — Naturally, methods must vary as children advance in age and in mental power. "Nature study" progresses toward science, "number work" toward arithmetic, and "language study" toward grammar and rhetoric. The casual observation becomes orderly, the unconsidered expression becomes definite, but solely because the child's mental state is different. In most cases, though not in all, the methods

here considered will be those applicable to the beginning of a particular study.

With this understanding of "method," we will proceed to its application to the subject of reading.

METHODS OF TEACHING READING

There are many methods of teaching reading to beginners, all of which, however, fall into a few classes determined by the unit of study, whether the letter, the sound, or the sentence.

The Alphabetical Method. — The alphabetical or spelling method was in universal use until comparatively recent times. This is hardly worthy of being classed as a method. It is merely the unconsidered way in which reading was taught before scientific method had received serious thought. Its unit was the letter as named, and as combined on the printed page with other letters into words. The oral significance of letters was scarcely even thought of. As the first step in learning to read, the children "learned their letters" by name and appearance. Next they learned simple combinations as *a-b ab*, *b-a ba*, always arbitrarily and without conscious recognition of the sonant value of the letters. It is probable that there was, at least in some cases, a subconscious recognition of sound values, especially of vowels; but if such recognition existed, it never advanced into consciousness. The child never became aware of a synthesis of sounds in *bat* differing at all from the names *be-a-te*. Yet though the process was necessarily slow and painful, children learned to read by it, relying on memory and sight. Its great defect was not its awkwardness and slowness, but what is still the great defect

of all its direct and collateral descendants, namely, that reading in its earlier stages was not reading at all, but merely calling syllables and words.

Two Classes of Methods. — With the development of educational science in the latter half of the nineteenth century, reading naturally received early attention. The faults of the old way were manifest to even shallow observers. Hence many teachers set about devising new methods. These efforts fall into one or other of the two classes into which all modern methods of teaching reading fall — the one logical, the other psychological. The former takes as its unit the sound of the letter; the other, the whole word or sentence as expressing an idea or a thought. There are several so-called methods for which their authors claim great merit, in both these classes. Some indeed claim the merits of both classes.

It is necessary, therefore, to bear in mind the fundamental determining difference, which is *the door of approach*, whether the sounds of the letters or the ideas or thoughts represented by the symbols.

Phonic Methods. — The various phonic methods, by whatever special name they are called, are the direct development of the original alphabetical method. The sound of the letter has taken the place of the name, and the synthesis of the sounds that make the spoken word has become conscious and purposeful. The aim is simple, to secure the recognition, in the graphic symbol, of the word already familiar as spoken. The method is logical rather than psychological. That is, it follows the orderly development of the word considered as a mechanical structure, and not the laws of growth of the mind of the child or his natural way of learning.

The earliest of these methods to gain general recognition was called correctly " the synthetic method." It was more radical than any of its successors. The first step was the recognition of the sounds of the letters. To secure this, much drill was given upon single letters. Then these were combined by sounds into pronounceable groups, which were sometimes words, sometimes recognizable syllables, and sometimes mere meaningless aggregations, usually representing " families," as the *at* family, the *op* family, and the like. The children were drilled upon such lists as,

at
bat
cat
dat
lat

In order to make possible the study of all the sounds of the letters, an intricate system of diacritical marking was employed, creating practically a new alphabet, in which every sonant element of English words was supposed to be represented by a character. Later these phonic groups, or " phonograms," were used in the building of words, after which children began to read.

This was a carefully thought out and logical system. Within certain very manifest limits it produced notable results. Undeniably children acquired extraordinary facility in using the marked letters to build the family — the combination of sounds — unhampered by any consideration of purpose. They worked for synthesized sounds, and they got them. Moreover, the facility acquired was of real service in the detection of new words as they occurred in the reading lesson. For a time

the apparent progress of the children was truly astonishing.

The defects of the system, however, were no less notable. One of them has already been mentioned as the greatest defect of the alphabetical method, namely, that "reading" was, at first, not reading at all, but merely calling words, the meaningless repetition of synthesized sounds; and all the evil characteristics of the old methods were present, — the hard voice, the uniform modulation, the pause between words, the unvarying stress upon all words important and unimportant.

Then, when introduced to words without diacritical marks, the children were somewhat like cripples whose crutches had been taken away. It took time and effort to reduce the alphabet to the conventional twenty-six letters. So, even in the matter of time, the apparent saving at the beginning was often lost in the later delays incident to really learning to read. Moreover, the desirable influence upon all the later reading of the first impression that reading is getting thought was, of course, forever lost.

Phonics and Spelling. — Perhaps the most peculiar effect of this phonic method was that upon spelling. It seemed practically impossible for children accustomed to the luxury of a complete phonetic alphabet ever to adjust themselves to the peculiarities of English orthography. The truly "phonetized" children continued to spell, years after, in a manner that would have rejoiced the heart of the laird of Skibo.

The purely synthetic method, though heralded as the great emancipator from the bondage of the primer, did not long survive, but it left a healthy family of de-

scendants more or less resembling it, which we still have with us.

Later Phonic Systems. — In general these have uniform characteristics. They are mainly analytico-synthetic. The sounds, instead of being stated arbitrarily as belonging to certain letters, are "developed" from words and then recombined: *rat* becomes *r-ă-t*, the sounds only being given. The "family" relation is still maintained, but the combinations made are strictly of words, the meaningless aggregations of sounds such as *dat* and *lat* being no longer allowed.

This change indicates a tendency on the part of the advocates of phonetic teaching toward sounder educational principles. The presentation of a whole word is at least a partial recognition of the way a child naturally learns things. It is to be feared, however, that even yet in too many instances the word is presented as a combination of sounds rather than as the symbol of an idea. The word *rat* does not stand so much for the interesting, if unpopular, little rodent whose name it is, as for the synthesis of the three sounds represented by the letters *r-ă-t*.

There are so many further modifications of so-called phonic reading that it is impossible to follow them. Surely even Mrs. Pollard would be unable to recognize some of the descendants of her scheme. But these modifications are all in more or less full recognition of a psychological basis of teaching. Some go so far as to present entire sentences and even whole verses for inspection by the children — a sort of by-guess reading — and to encourage the recognition of some words as words before taking up the phonic analysis. Every step to-

ward making " reading " always reading, the getting of thought, and using all mechanical devices merely as aids, is encouraging.

Danger in Secondary Ends. — Of course it is claimed that this is the purpose of all phonic systems. Doubtless in the mind of the teacher it is, but in the mind of the young child the manifest aim is the real aim, and untold harm is done in our schools by presenting continually secondary ends rather than primary. This error is common not merely in the reading lesson, but in other subjects as well, and especially in creating motives for study and even for conduct. The eye of the child should whenever possible be kept upon the real end in view. This has an immediate bearing upon the creation of ideals and the development of character. In many instances it may be impossible to do this; the real end may be too remote and abstruse for the child to grasp, but usually it is possible — certainly in many more instances than our school practice would indicate. In teaching reading it is not only possible but easy. " Reading " can as easily be reading as the mere calling of words.

English not Phonetic. — Even with this higher consideration aside, there are fundamental linguistic reasons why " phonics " can never be the real basis of instruction in reading. Our language is not a phonetic language. Because of its history, of the many elements that have entered into its composition, and especially of the distortions that it has suffered at the hands of ignorant early printers and of many pseudo-philologists, a very large part of its syllables are purely arbitrary combinations of letters which must be committed to memory, without aid from logic, or science. So large a part of the words

in common use are thus irregular that attempts to form scientific classifications, instead of aiding the memory, merely cause confusion.

Take, for instance, one of the most reliable of the rules, that a final *e*, silent after a single consonant, lengthens the short vowel preceding the consonant. This is usually given to children very early, as one of the laws suitable for infant minds, and it is one of the guideposts to the foreigner trying to thread his way among the crossroads of our language. The start is nimble: *tap, tape; rip, ripe; cap, cape;* and so forth. But soon come *tare, hare, bare,* and perhaps thirty more. Well, we will classify these as an exception and go on. We have not gone far when we run upon *dove, love, above,* and a long list — another exception. And so with *halve, salve,* and the like, and then *live, give, are, were,* and the rest, until the exceptional instances seem to outnumber the regulars. And yet, as I have said, this is one of the most reliable of the rules; indeed, it is almost the only one of sufficient embrace to be of much consequence. From this comparative regularity all the way to *ough* with its eight different pronunciations is a road strewn with "troubles." The diacritical markings are merely danger signs, useful so long as they remain, but leaving panic when removed.

Is it not vastly better to teach reading as reading and get such assistance from phonics as we can, than to overwork this valuable aid, misrepresent values, and fail at least of the higher results?

Psychological Methods.—Of the psychological methods of teaching reading to beginners there are two general classes, one taking for its unit the word, representing an idea, the other taking the sentence, repre-

senting a complete thought. In both, the meaning of the word rather than its phonetic composition receives the first consideration.

The Word Method. — The word method in operation is simplicity itself. A familiar object is presented before the children and named by them. The name is then written on the blackboard. Thus the written and visible symbol of the name of a familiar object becomes associated with the same name as known to the ear. The child becomes, as to the word, eye-minded. After the names of several objects have been learned in this way, a few necessary connecting and descriptive words, as verbs and adjectives, are taught. Thus the child becomes possessed of a small working vocabulary. Next, sentences are constructed of these words and read by the children. So far the process is one of simple word memory. The words are treated first as wholes by themselves and then as parts of a sentence. Here lie both the strength and the weakness of the method.

Tests of the Word Method. — The real tests are two: 1. Are the pupils to go on indefinitely memorizing new words as wholes, Chinese fashion? 2. Can the words treated thus independently be united smoothly into sentences, so that reading shall be repeating thoughts and not merely calling words?

Necessity of Spelling. — As to the first test, naturally the words must ultimately be broken up into their sonant elements and these elements must be used in building other words; that is, children must learn to spell and to recognize new words by spelling before rapid progress can be made in learning to read. Here comes the claim of the phonic teacher. By phonics the children learn

these sonant elements of words and are made independent in reading new words. This would be true enough if our language were a phonetically regular language, but it is not, as has been stated above, and attempts to teach by a phonetic system, when such a system includes so little, results in artificiality and teaching much that " isn't so." Children who learn to read by the word method must early learn to spell. But this spelling must be in the old-fashioned way of memory, aided here and there by those few phonic facts that are of general significance. Some of these may be taught by rule, though the many exceptions are likely to make most of the rules confusing rather than illumining. Most of the phonic facts will be grasped by the children by a sort of unconscious generalization. Colonel Parker, who was an advocate of the word method, used to insist that this unconscious generalization was sufficient and that the children needed no special drill in phonics.

How Children Learn. — Of the two, a purely phonic system and a word method with its spelling unaided by formal phonics, the latter unquestionably rests on a sounder psychological basis; it is more nearly like the way in which children acquire their first knowledge of the world in many phases. The most familiar objects are learned first singly by memory alone. Then the mind unaided forms a simple generalization. Acquaintance is first made with Towser, the family dog. Then every dog is Towser. Later Towser and all the rest become *dogs*. But the generalization was first made unaided and unconsciously, when the neighbor's dog was called Towser.

Whatever may be its other faults or merits, the word

method at least employs the same unit and order that the child uses in learning to talk. The baby first recognizes objects through their action upon some one or more of the senses. Then he learns to associate with these sensations certain regular impressions made upon his auditory nerve, until at length he knows the word heard as belonging to the object. Later, after much effort, he learns to utter the word himself, and this without any conscious analysis of it into its sonant elements, without any instruction as to the character and mode of action of his vocal organs.

Word Method Natural. — This method, using the whole word as the unit of instruction, is the purely natural method; most other methods, called natural, are really artificial attempts to substitute the laws of logic for those of infant development.

Place of Analysis. — The word method, however, may be greatly aided by an analysis of the words, after a sufficient vocabulary has been acquired, and reading has so far advanced, as reading, that the children may with profit turn aside to consider analytically the material with which they are dealing. There should be much spelling of words, both oral and written, both by letters and by sounds. Words, too, should be grouped for spelling according to their phonic elements, as *bar*, *car*, *far*, *mar*, to be followed by *bare*, *care*, *fare*, *mare* — but this without the formal rule which requires an explanation of the troublesome exceptions. All that is valuable in the analogies will be grasped unconsciously through the association.

Other useful exercises are writing and observing words first with and then without suffixes and plural forms, as

bird, *birds*, *think*, *thinking*, and especially words divided into syllables. Uncertainty as to syllabication is perhaps the greatest danger from the word method, and needs to be carefully guarded against both in enunciation and in writing. Rules, however, for all of these facts may well be left for the language lesson. Indeed, they are of much greater consequence in the complementary art of writing than in reading itself.

Marking Silent Letters. — There is one so-called aid to reading that is especially vicious. I refer to the writing or printing of words with the " silent letters " crossed out. Such a device may be resorted to by the teacher, occasionally, when writing on the blackboard, merely to save time. But the presentation to children, in the first stages of learning to read, of a printed page containing words having some of the letters crossed off gives false impressions of the *looks* of the words at the outset and prepares the way for future trouble. Because, whatever may be the value of " phonics " as an aid to reading, reading itself, as practiced, consists in instant and rapid recognition of words as wholes, and it is of the utmost importance that children get correct impressions of words as they *look* on the page. The sole value of phonic analysis at its best is in aiding children to call correctly new words; but when this aid perverts the appearance of the word, it becomes a hindrance to ready reading.

The Sentence Method. — A third class of methods for teaching beginners to read is based upon using as the unit the sentence, representing a complete thought. This is like the word method in that it is pyschological rather than logical. It differs from it in treating the child as having advanced beyond the stage where knowl-

edge comes in single unconnected words to that where he both comprehends and uses the complete sentence — the statement, the question, the command. The step from *doll*, *milk* to "This is my doll," "Give me some milk," is psychologically a very long one, but it is taken long before the child comes to school.

The sentence method recognizes this fact and presents to the children as the first reading lesson a complete expression of a thought. The thought is naturally a very simple one and the sentences at first are very short. But they are sentences, and the first reading of them is genuine reading and not merely calling words. Whether the first lesson is "This is Helen" or the command "Run," speaking it as a whole is reading. The very first impression of the act of reading is the true one. There is nothing to be undone afterward. The painful effort to make real words of the synthesized meaningless sounds, or to group the words into sentences, is spared. This is certainly a great gain.

Different Plans. — Some teachers of the sentence method would use first sentences made by the children and written upon the blackboard, so that the children may recognize the symbols of their own spoken thoughts. This plan is sure to produce vivid impressions and to give a vital interest to the reading lesson.

Others would have the first lesson descriptive of an act performed by or before the children, as *I walk*, *we jump*, or of a command to do something, as *Run*, *Jump*, *Open the door*. This also makes reading vital and insures interest. It makes it possible, moreover, to make the first sentence very short; even one word will suffice for a command.

Of course these first sentences must be followed by many more in which the same words are used in many different relations. Some teachers would develop the words first. This is almost a reversion to the word method. Others would merely see to it that the words are recognized wherever they occur. These are matters of detail.

The reading of sentences must be followed, however, later by the study of words and the various spelling and phonic exercises suggested to go with the word method.

Sentence the Best Unit. — On the whole I incline to the opinion that the sentence is the best unit in teaching reading; that it makes reading more natural and more interesting; that children taught in this way are more likely later to grasp whole phrases and sentences at a glance, which is the secret of economical and appreciative reading.

Use of Larger Units. — Indeed, some radical teachers favor presenting first entire paragraphs or rhymes for indefinite recognition, that the impression of *wholeness* may be made very strong. While a very able teacher may succeed with such a method, it is to be feared that in the ordinary school it would result in vague, unprofitable guessing at words.

Special Methods. — There are certain patent methods of teaching reading which cannot easily be classed as either psychological or philological. They belong by themselves and had best perhaps be called unpsychological. One consists in taking some selections of children's literature, chopping them up into words, presenting these words in new relations, often without sense, with the hope that thus the children will learn them and ulti-

mately will come back to the literature. Sometimes a single word taken from a children's jingle is used in forty or fifty consecutive sentences, most of them having the slightest meaning.

This system has for its advocates many unthinking people to whom the word "literary" bears a charmed meaning, and they think that they are teaching by a literary method if they use this. As a matter of fact, the method might be properly called an anti-literary method. The child who has had these fifty sentences, all with one key word, when he comes back to the original story is sure to be affected with nausea. It is hard to conceive a method of teaching reading more sure to produce distaste for the whole subject than this. To make matters worse, this and some other special methods are so unnatural that they require special manuals, thus adding greatly to the burden of overworked teachers.

Teaching reading is not such a difficult matter that it requires all this fuss. In most cases the special method is teaching reading by indirection, by something that is not reading. Its advocates point to marvelous results, but it should be remembered that children, like animals, can be taught any trick, if care enough is given to it. But to teach a number of things only loosely associated with reading does not necessarily lead to reading at all; quite frequently it leads away from it. The test comes in the higher grades, and after many years of observation. I have never seen pupils in the higher grades of schools who have been taught by any patent method whose reading was superior to that of those who had been taught by simple and natural methods, and in most cases I have found it to be inferior, in spite of all the

extra time and effort and the agony of teacher and child in mastering an awkward scheme.

Whatever the method, the first reading should always be of words familiar to the children. The earliest lesson should not attempt to add to the pupil's vocabulary; that comes later.

So much for method in the first lessons in reading. Is nothing to be said as to the conduct of the reading lesson beyond the primer and first reader stage?

Reading in Intermediate Grades. — The intermediate grades really offer very interesting problems. As a rule they are the weakest spots in our schools. The lower and the higher grades have received much more thought, much more scientific study. Yet in these intermediate grades the future tastes and inclinations of the great majority of the children are determined, in so far as the school determines them. If the ability to read rapidly, with comprehension and with appreciation, and also with taste for good reading, are not secured in these grades, by far the larger part of the children in our schools will never secure them.

Rapid Reading. — First, children should learn to read rapidly, "to themselves." By this I mean that they should be trained to grasp quickly the sense of sentences and even paragraphs without dwelling upon each word. This ability is of especial value in reading newspapers and other current reading matter of an ephemeral character, as well as much literature of a better sort, especially fiction. Of course I do not mean to say that there are not books that must be read word for word, with the utmost care and deliberation, but such books are few and constitute a very small percentage of the reading of most people. Most of what we read perforce

does not justify careful and slow perusal, and there is great waste in reading it one word at a time. One sometimes sees people of apparent intelligence reading newspapers, the moving lips showing that each word is being mentally pronounced. Such people have not really learned to read.

The first essential to comprehensive reading is the ability to pick quickly the salient words, those that hold the key to the thought. This ability can be secured only through much practice. A good exercise to this end is to give the members of a class each a different paragraph or brief passage and allow a short fixed period for reading, and then to require them to give the substance of the passages read in the fewest words possible. If any child has failed to grasp the thought, ask suggestive questions and let him try again. Such an exercise frequently repeated tends to develop comprehensive and rapid reading.

Naturally such a method cannot be applied to poetry or to the best oratory, nor indeed with equal profit to the finest literature of any sort. A true literary artist makes every word tell, and if the art is applied to a worthy subject, every word should be carefully read. The reader who attempts to " skip " in reading Emerson or Browning or Tennyson is likely to lose the best things.

Reading with Appreciation. — This leads to the second point to be emphasized in reading in the higher grades, namely, reading with appreciation. This is a very different process from the hasty reading of the daily news or the best selling novel. It involves a sympathetic spirit, catching the author's feeling as well as comprehending his thought.

To take an instance from well-known literature, see Lincoln's Gettysburg Speech. The beauty, the literary finish, the power of this great work of art must be felt; it is quite beyond mere intellectual comprehension. Hence, in the reading class, before attempting to read it, the setting should be made plain, the momentous struggle, the sad significance of the occasion, the heavy weight upon the great heart of Lincoln. Then the class is ready to read with subdued solemnity the noble words. Then each sentence and each word may be studied to see how in so few words such great thoughts were uttered.

Moore's lines furnish another illustration:

> "When day with farewell beams delays
> Among the golden clouds of even,
> And we can almost think we gaze
> Through opening vistas into Heaven,
> Those hues that mark the sun's decline
> So grand, so beauteous, Lord, are thine."

The solemnity and the beauty of this passage should be felt by the reader while reading.

"Paul Revere's Ride," on the other hand, requires a quite different spirit on the part of the reader; and "The Wonderful One Hoss Shay," a very different feeling indeed.

Not to illustrate further, in the reading of choice literature, such as fortunately constitutes the greater part of the material found in most higher school readers, the aim should be to secure appreciative as well as comprehensive reading.

Reading Aloud. — One of the best means to this end is reading aloud. This is especially true of poetry.

This should include reading aloud by the teacher to the children, as was said in the preceding chapter.

The older pupils can easily be trained to use their voices to express lightness and mirth, serious earnestness, beauty, awe.

Preliminary Practice. — It is well, before reading a long selection of a certain dramatic character, to practice upon short passages illustrating a similar phase of sentiment. For example, for practice in light and cheerful sentiment, not humorous, the first lines of Whittier's "To a Barefoot Boy" are excellent; with the element of humor added, Cowper's "John Gilpin's Ride." For more serious thought, the earlier stanzas of Gray's "Elegy" are fine reading for older pupils; for more tender feelings, comprehensible to children, lullabies are good, such as Tennyson's "Sweet and Low." For developing appreciation of the awe-inspiring there is nothing better than Moore's lines quoted above. The point is, the children before reading good emotional literature should be put into the proper frame of mind and by practice should have their voices and their manner of reading adjusted to the spirit of the selection.

Grasp of Thought. Emphasis. — For reading aloud effectively it is necessary not only to be in the proper psychic state and to have voice and manner properly adjusted, but there must also be an especially good grasp of the thought of the matter read. The salient words must be picked out for emphasis. Given the proper feeling, emphasis is the key to good oral reading.

A good exercise is to select passages and have the class decide by discussion and experiment what words should

receive first emphasis and what ones secondary. For example, in Macbeth's lines:

> "If it were done when 'tis done,
> Then 'twere well it were done quickly."

should the first emphasis be on *were* or on *done?* Should secondary emphasis be on *then* or on *quickly* or both? A little such practice will make the pupils keen to " see the point " of what they are to read.

But not merely words are salient; sometimes whole phrases or sentences even, in which no particular word needs to be emphasized, convey so much of the author's thought that they should receive especial emphasis. For example, the sentence:

> "She looked down to blush and she looked up to sigh,
> With a smile on her lip and a tear in her eye." —

is divisible into four parts, each one of which is important, but no single word stands out enough from the others to require particular stress. It should be read evenly.

Résumé. — For reading aloud the needs are first to get into the spirit of the piece, second to grasp its whole thought, third to select the proper words and phrases for emphasis. As a preparation for all of these there should be drill in reading similar short sentences and careful study of the piece itself.

Final Result. — The great final result of the reading lesson should be a love for good books. By every possible means appreciative taste should be developed. Then the children should be led from the reading book to the world of books. The single selection should create the desire to read the book from which it was taken. The

public library should be the chief ally of the teacher of reading. "Reading" should always be reading. It should always be getting thought. Even with beginners such methods should be employed as will focus attention on the thought.

The reading lesson should be the key to unlock to the children a treasure. It should always be a joy, never a task.

CHAPTER IV

English Language Instruction

Language is the fundamental, the universal art. It is not only necessary for the efficient communication of ideas among men, it is essential to thought itself in all its higher or human phases. Without it, apparently, we could do no thinking except such crude and rudimentary thinking as is possible to beasts. This is the state of deaf mutes before they have been taught to recognize and use words through some other medium than speech.

Language used effectively by Illiterate. — Yet practical instruction in the use of language, until late, had no definite place in the curricula of elementary schools. One reason for this condition is doubtless to be found in the very universality of the art. In spite of Dogberry, reading and writing are necessarily school subjects. They are to be taught by special organized effort and with the use of books. Whereas language everybody uses. It is acquired in infancy, and without any special instruction, from association and by imitation. When a child first comes to school he has a vocabulary adequate to his needs and can use it effectively; and all through life, whether literate or illiterate, his use of language, developed from practical experience, is quite sure to be adequate to his practical, fundamental needs.

So that, apparently, language instruction, instead of

complaining at its long exclusion from the elementary school, must justify its plea for admission. The history of language instruction in elementary schools is suggestive and explains many things.

Growth of the Curriculum. — Like the medieval school, the early American school had its *trivium* and its *quadrivium*. The former comprised the "three R's," regarded as the fundamental arts, and constituted the entire curriculum for the younger pupil. The *quadrivium* for the older pupils at first merely added, to the trivium, grammar.

The Dominance of Grammar. — Grammar was the characteristic and conspicuous study of the higher schools. It gave its name to them, and this name is still retained for the higher grades of the common school. It dominated the schools, not only in subject matter, but in method. For in the "good old days" grammar was Grammar, the scientific study of desiccated language. At first it was chiefly Latin grammar; and the English grammars which followed, and indeed many of those that still persist, were modeled after the Latin grammar, in spite of the differences of the two languages in spirit, in genius, and in the order of presenting thought.

Grammar a Barren Subject. — But never, in either Latin or English, did it descend to so frivolous a consideration as either the practical art of effective expression or the true comprehension of literature. The medieval trivium was richer, barren as it was to serve as the sole subject of study, for it included with grammar both logic and rhetoric, the science of thought and the art of expression. But our grammar stood sole and lonely. Not until late in the last century did even the colleges treat rhetoric

as worthy of serious consideration, while in many elementary schools even now language instruction consists of a course of predigested grammar. For grammar rapidly forced itself into the elementary curriculum. It was the only answer suggested to the demand for instruction in the mother tongue. The mistake was natural enough. It is the same mistake that was made at first in regard to the study of the phenomena and laws of nature. It was basing the instruction of young children upon logic rather than upon psychology, upon the nature of the subject studied more than upon the nature of the children.

Language and Grammar Differentiated.—Therefore, in our discussion of instruction in the English language, it is necessary to differentiate carefully its two chief phases, what we commonly call "language lessons" and "grammar." Both are important subjects, essential to anything approaching a "good education." But they are not the same subject, and their confusion has vitiated much of the instruction in language given in the elementary schools.

The two subjects differ both in nature and in aim. In its nature, language is an art, the art of expressing thoughts in words. Grammar is a science, a statement of the laws according to which speech is organized. In aim, the language lesson seeks to give the student possession of the art, to enable him to express his thoughts in words, effectively and elegantly. The aim of the grammar lesson, on the contrary, is not to cultivate effective expression, but to acquaint the student with the laws of speech; to make him critical of his own speech and that of others.

However, though the two subjects differ so widely, they have very intimate relations. Grammar includes the body of classified knowledge pertaining to the laws of speech. Obviously, the possession of this knowledge will furnish a criterion of exact and correct expression. A genuine art of speech must rest back upon known laws. In other words, grammar, the science, is the basis of rhetoric, the art. But a knowledge of the science does not convey skill in the art. There is a vast difference between the establishment of an art on the sure foundations of laws, or even the use of such laws by a mature and competent artist, and its practice in elementary forms. A child does not need to understand the physical laws of sound and harmony before he can be taught to sing in time and in harmony. Neither does he need to know the laws of grammar before he can be taught to speak correctly.

Justification of Language Lesson. — This leads us to the consideration of the "language lesson," its justification, its purpose, and its method. Why are language lessons justifiable in elementary schools? If everybody without being taught uses language with reasonable effectiveness, why take time in school to teach it?

Social Values. — *First.* There are certain conventions of literary art which cannot be acquired without instruction. While conformity to these conventions is not absolutely necessary to the effective communication of thought upon the simple and more practical relations of life, failure to conform stamps one as uncultivated and injuriously affects one's standing among his fellows. This may not seem the highest reason, but it is certainly sufficient to justify instruction in the art.

Conventionally correct speech and conventionally correct manners, while not so important as unmistakable clearness of expression and genuine kindliness of spirit, are still the proper media for these higher qualities. More than any other superficial arts they smooth the way through the world. The excellent Maine sea captain who wrote of himself and his companion, "Me and William's gittin' along fine," expressed himself with perfect clearness and adequacy, yet his form of expression left something to be desired as a qualification for admission to a salon.

Letter Writing. — *Second.* This phase of the subject has a very "practical" aspect. Letter writing, one of the most important branches of literary art, is very dependent upon conventional forms and the use of words with exact nicety. Modern business communications are, more often than not, in the form of letters. The ability to write letters in correct form, in "good English," saying exactly what one wants to say, is an absolutely indispensable part of the modern business man's equipment.

Necessary to High Thinking. — *Third.* The higher thoughts and the finer phases of thought cannot be expressed at all through the crude homespun language of the unlettered. Paucity of language prevents the thinking of high thoughts or of making those delicate analyses of thought that add incalculably to the joy and the fullness of life.

Aids the Comprehension of Literature. — *Fourth.* Language training not only makes possible the expression, and hence the thinking, of high thoughts, it also makes possible the comprehension and appreciation of the best in literature, which is unseen by the untrained eye.

Acquisition of Good Habits. — *Fifth.* The great argument for instruction in the art of language is the early acquisition of habit and its fixity when once acquired. The correct use of language is the result, not of knowledge, but of habit. A teacher who was overheard saying to her class, "Ain't that all the further we took?" when called to account, said, amid her tears, "Why, I knew better." I replied, "Yes, doubtless you could have parsed your own blunder." And she could. It was the result, not of ignorance, but of habit, sheer habit, acquired in the uncultivated home. The greater number of homes are uncultivated. If the schools are to remedy the defects of the home, and equip the children with correct habits of speech, they cannot catch them too early. Instruction must be definite and thorough and of the right sort, from the earliest primary grades.

Objects of Instruction. — Let us consider now the aims of the language lesson. The first great aim of language instruction in the earlier years of school is to train the children to facility, accuracy, forcefulness, and elegance in their habitual use of English, both when speaking and when writing.

Doubtless most teachers will accept this statement, at least in theory. But, unfortunately, when they come to actual teaching, too often the chief effort is bent upon another aim altogether, namely, the teaching of the facts and principles of grammar. The homeopathic dose of calomel is a dose of calomel still, though disguised and diluted. The *grammar notion* is so firmly fixed in the minds of teachers, that it is well-nigh impossible to eradicate it, even from teaching that is ostensibly for a wholly different purpose. And the authorities

giving tests, no matter how earnestly they may have urged upon the teachers practical work in language, are almost sure to put the brunt of the examination upon grammar.

Moreover, the authors of "language books," while in their prefaces insisting upon the paramountcy of practical language lessons, in the books themselves too frequently place the emphasis upon grammar, and to such an extent that the teachers are sure to feel the necessity of doing likewise. For example, several of these books define the sentence respectively on pages 7, 3, 2, 3, 5. This is done manifestly under the notion that before using an instrument of communication, or calling its name, it is necessary to be able to define it in words; which is as sensible as not to allow a child to name or play with a doll until he can define it in "good set terms," or to ride on or mention a horse until, like Bitzer, he can give a definition of it. Some authors, in a vain endeavor to "temper the wind to the shorn lamb," resort to simplified definitions which are inaccurate and misleading — Bowdlerized grammar. Witness, from one modern book: "A group of words which (*sic*) tells one's thoughts is called a sentence."

Essential Evils of Grammar Dominance. — These are but illustrations of the foes that lie in wait to deceive and mislead the teachers who would teach language really and vitally. They are to be criticized, not chiefly because of the futility or even the misleading nature of the instruction resulting, but because of the influence of this early technical teaching on the spirit and method of all the work. "The trail of the serpent is over it all." The efforts of teacher and class alike are inevitably

diverted from the real object of the instruction to a secondary function. Like the rudimentary tail, the notion persists that to be able to recite the rules and definitions of grammar is a prerequisite to the utterance of correct speech. The battle of psychology against logic in the teaching of children is a long and hard one, and the favorite battle ground is the field of language.

Place of Grammar. — The time comes, of course, when the teaching of grammar is a legitimate aim. Even in the elementary grades, when the function of a word as such is spoken of, the correct name of the word is better than a nickname. A name is a handle, and when it can be used with reasonable accuracy, it is preferable to a substitute. It is well enough for a child to call a dog *bowwow* until the function has become associated in the infant mind with its source. Then the *bowwow* should become the *dog*. So "name-word" very early gives place to "noun." But this is at most incidental. Grammar is properly a high school study, though, as many never reach the high school, it may without injury, in a simple form, enter into the higher grades of the elementary school. Yet even then it must not be allowed to interfere with the constructive work of the language lesson.

Necessity of Vital Interest. — The fundamental general aim of all class exercises is to arouse and maintain a vital interest in the subject pursued. Such interest on the part of young children demands the free, glad exercise of natural powers, aching for exercise. Free and joyful expression of himself is the manifest first necessary aim in a child's education, an aim that precedes and makes possible higher disciplinary aims. For young children

in a language class, formal grammar, even in the shape of mere definitions before they can possibly be developed intelligently out of experience, dams the stream of interest and perverts the aim of instruction.

Training to Think. — A second aim of the language lesson is to train children to think. Thinking is organizing ideas into definite comprehensible wholes, technically known as sentences. The relations of thinking and expressing thoughts are reciprocal. No clear expression is possible unless the thought to be expressed is clear. On the other hand, the effort to organize ideas for expression clarifies them in the mind. Hence a good language lesson is training in thinking.

Appreciation of Literature. — A third specific aim of the language lesson is the appreciation of literary art. This aim is not chiefly critical, in the offensive sense. Indeed, with young children such critical study should be wholly obscured. But, through the language lesson, as well as through the reading lesson, children should learn to see the beauties of good literature. In the lowest grades, this can be little more than " I like " or " I don't like," but gradually the reasons may be brought out. And in the grammar grades a considerable degree of well-founded taste may be developed.

It must be remembered that the vast majority of pupils never go beyond the grammar school; and whatever of taste they acquire must be developed early. Especially by correlating language study with the reading lesson, enough may be accomplished to direct in great measure the reading of children after leaving school.

Enriching Vocabulary. — A fourth aim of the language lesson, which is really a corollary of the other two, is to

enrich the pupils' vocabulary and to enable them to use words in their exact meanings. The average vocabulary is pitifully small. By large numbers of fairly intelligent people two or three adjectives are used to indicate nearly all qualities. "Lovely" and "horrid" cover a multitude of characteristics. Punch has a picture of a French boy asking an English boy what the three *r*'s are. After some hesitation the answer is given, "rum, rippin', and rotten," adjectives that are supposed to describe all things worthy of description by an English schoolboy.

I was visiting the Grand Canyon of the Colorado in Arizona. A lady, after gazing long at the stupendous, awe-inspiring panorama, turned to a companion and said, "Isn't it just the cutest thing you ever saw in your life?"

To remove this poverty of words to express varying ideas should be one aim of the language lesson. Both through the appreciative study of literature and through much attention to the choice of suitable words by the children in expressing their own ideas, it should be impressed upon them that the right word tells the truth, the wrong word does not.

If all teachers of the subject would differentiate between the "language lesson" and the "grammar lesson," and would expend their efforts in the former toward securing correct habits of speech, rather than verbal statements of laws uncomprehended by the children, it would mark a great advance over prevailing conditions. But before this may be hoped for those in authority must fix, as the criterion of the teacher's work in language, correct speech, oral and written, by the children, rather than statements about it.

CHAPTER V

Language Instruction Methods

How Children learn Language. — How does a child naturally learn to use language? At first altogether, and always chiefly, by sheer imitation. There is no other way for him. One's vocabulary depends upon memory. The art of language consists in using the remembered vocabulary in effective combinations, and such combinations are for the most part imitations. Only at rare intervals is an original form of expression produced. In teaching language the two inseparable and essential elements are the language of others — conversation and literature — to supply vocabulary and model forms in great variety, and much practice in the use of language, to reduce conscious imitation to unconscious imitation or habit, to make the vocabulary learned a permanent possession through use, and to give facility and personal character, — style, — to the form of expression employed.

Coincidently with observation and expression, and as a further aid in the acquirement of language power and of the art of expression, comes a knowledge of certain fixed conventions of general acceptance. These are the " rules " of grammar and of rhetoric.

In the earlier stages of a child's learning language, rules are of little consequence. With advancing maturity and logical power they become increasingly important, clinching and putting into convenient and condensed

form the principles and language customs that have already been demonstrated to the learner and imitated by him. Only when they record experience are these rules of value — a fact that bears directly on the method of teaching.

Good Models Essential. — The first essentials, then, in teaching language to children are good models to imitate and good thought to express, with the desire to express it.

Before a child comes to school, his models are chiefly the oral speech of family and of playmates. In some cases to these have been added stories told to the children and learned by them, which have greatly enlarged their vocabulary. It follows that among the members of any class entering school there are wide differences of vocabulary, both in extent and in character, and also in habits of speech.

During the first two or three years of the school life the teaching of language is mainly incidental, and, perhaps for this very reason, especially effective. The sources of new vocabulary are vast, all the new subjects of the school course and the conversation of teachers and fellow pupils about these subjects, — nature study, number, writing, and especially reading, through which the children receive their conscious introduction to the vocabulary and style of literature. Besides, the modern primary school offers and encourages an abundance of oral expression on many subjects, and this expression is free, with the mind fixed on the thought and on the expression merely as to its adequacy, unvexed by the disturbing suggestion that "language" is being studied and unhampered by fear of interrupting correction. Such

experiences develop language power amazingly, so as often to give rise to questions as to the reason. We are apt to forget that power in language, as in all else, is a by-product.

Decline in Language Power. — In the third or fourth grade, usually, the formal language lesson is introduced, commonly with a book. Then too often begins the decline. Language power seems to be palsied. In spite of liberal doses of grammar, both raw and predigested, free and effective speech gradually disappears from the schoolroom, being relegated to the home, the playground, and the street, where freedom is not always tempered with continence, or adorned with art. Why is it? Let me risk wearying the reader with a brief criticism of the usual formal language lesson, drawn from the average language book.

Bad Lessons. — First comes a definition, frequently badly expressed, and sometimes incorrect, in a vain attempt to make plain to children what is beyond them, by expressing it in inferior English — a very common error, whether " baby talk " or grammar. For example, — " A tongue sound used to indicate an object or an idea is called a word," or this, — " Mental pictures are *for short* called ideas."

The words of the definition having been committed to memory, then comes a copying exercise " to fix them." Then follows an exercise in filling blanks, as (from one book) " The —— song is sweeter than the —— "; or (from another book) " A pin —— a head but —— no hair." Even worse than these are the formal grammar lessons in primary grades.

Thought, freedom, fluency, appropriateness, those un-

failing characteristics of untrammeled expression, are all absent. Language has become a mere task, — to " illustrate " something, to explain a rule or a definition. Hence it is no wonder that power is lost, for power comes only through exercise, and power in language is the result of the effective expression of thought.

Training to Think. — Since teaching language is teaching thinking, — organizing ideas and indicating their relations, — the necessary order of instruction is somewhat as follows: First, the presentation of good models. Second, stimulating thought that demands expression. Third, clarifying and organizing the thought. Fourth, securing free and abundant expression which, largely unconsciously, follows the models in vocabulary and style. Fifth, giving such definite instruction in regard to the conventions of speech — the rules of grammar and of rhetoric — as will enable the learner to judge of the correctness of his expression, putting his practical knowledge, his observed facts, into technical form convenient for memorizing. Sixth, developing and enlarging the child's vocabulary. Let us briefly consider these six essentials of method.

Sources of Models. — *First.* The models that the teacher can use are his own speech and that of the other pupils in school in so far as he can control it, and good literature.

As to the first, the teacher cannot be too careful. Children are so sure to imitate both consciously and unconsciously that a single incorrect expression used before a class is likely to form a part of the vocabulary of all the children and to spread even into the homes.

The chief reliance for models of form and of vocabu-

lary is literature, found either in books read by the children or in stories told to them; and it must be interesting literature. It is not enough to give children disconnected sentences illustrating a "point," or to require them to repeat correct forms many times. Mere forced reiteration does not produce habit. There must be interest in the thing repeated, to give effect to the repetition. An interesting story in which a form that it is desired to teach occurs repeatedly is vastly more effective in impressing the form than the mere recital of the form itself an indefinite number of times. The child who first listens wide-eyed to the story of the " Three Goats Bruit," and then tells it, using repeatedly, as he will, the form " It is I," builds a barrier against " It is me" many times more effective than if he were to recite or to write, " It is I," without interesting association any number of times. Hence, model passages, drawn from literature and illustrating the correct use of the forms that must be employed, should be studied in connection with the free expression, preferably beforehand, to lay a metaphysical foundation, and to suggest vocabulary and style.

Caution. — A caution is needed here. The written reproduction of choice literature, excepting very rarely for the sake of impressing some specified form, is vicious, and its most vicious phase is the paraphrasing of poems.

Material for Thought. — *Second.* The language lesson should present to the children a large amount of appropriate thought-compelling material of such a nature that they will be moved to think and will desire to express their thoughts. The subject matter must appeal to the children as of consequence. The larger interest in the

thought will carry the smaller interest in the form. The material that should be drawn upon for the language lesson includes the best in the child's world, and the most natural; his home life, his games and occupations, his school life, especially the content subjects of his daily work — literature, history, nature. These are natural and valuable subjects of thought upon which children can easily be induced to express themselves freely, if not too much hampered by fear of interrupting corrections.

Continued Discourse. — Excepting occasionally and for very specific purposes, the language expression should be in full and continuous discourse and not in mere illustrative sentences; that is, it should be natural, like expression when not in the language class.

Oral Expression. — The first expression usually should be oral. It is easier to correct and it is of more consequence to the average person.

Clear Thinking. — *Third.* Before thought can be expressed effectively, it must be conceived clearly. Teachers sometimes wonder at their failure to secure good English expression, and pound away on the forms and the rules and definitions, or even encourage much talking without securing the desired results, because they have ignored the essential thing, the thought itself. In many instances much time must be given to *clarifying* and *organizing* thought before good expression is possible.

Sentence and Paragraph. — The sentence and the paragraph are the elementary bases of the expression of organized thought, — the sentence of the single thought and the paragraph of the group of closely related thoughts. Hence in the earlier stages, and indeed in all stages of

language instruction, much attention should be given to the construction of clear-cut sentences and paragraphs.

The Sentence. — What is a sentence? An idea is the primary unit of thought. A thought is the union of at least two ideas in an assertion, a question or a command. Its essential feature is predication. A sentence is correctly defined as " the expression of a thought in words." But this definition is not for young children. Besides its logical definition, the sentence has also its functional or " working " definition. The first knowledge of anything that comes to a child is always a working knowledge and comes through observation and experience. The logical definition arrives very late, if at all. Most of us have a competent working knowledge of many things that we cannot define. What we first observe are appearance and function.

Children learn sentences in just this way. They observe the appearance. Each sentence stands by itself on a printed page, clearly separated from every other sentence. Its beginning and its end are clearly shown, the beginning by a capital letter and the end by an easily recognized mark. With a very little drill the children can quickly learn to divide a page into sentences from appearance alone.

Then each sentence does something, it has a function. It asserts, it asks, or it commands. This is a more reliable criterion than appearance. Together they are nearly infallible. At least they are sufficiently exact for the uses of any child in a primary school.

To tell a child of the third or fourth grade that a sentence is the complete expression of a thought does not

add to his knowledge of a sentence. It rather tends to confuse him, because he is too immature to grasp the metaphysical nature of a thought. And even if he were to grasp it, the knowledge would scarcely aid him in comprehending what he reads or in expressing his own thoughts. What he needs is a working knowledge, knowledge of appearance and function. So there should be much drill in recognizing sentences from these evidences. Many sentences of each of the three functional classes should be presented for selection on both grounds. Then the child should make many sentences of all three kinds. His first formal written work should be in expression of his own thought on some topic of interest to him, the technical requirement being that he make his sentences complete.

The Paragraph. — The study of the paragraph naturally follows that of the sentence. The paragraph is the secondary unit of organized language. The sentence is a union of ideas; the paragraph, of thoughts.

The first step is the observation of some selection divided into paragraphs, accompanied by a discussion of the reasons for such division.

This should be followed by a grouping of sentences into paragraphs. For example: The class talk about some interesting topic quite freely, while the teacher writes on the blackboard the sentences given by different pupils. Then the class discuss the sentences and decide how they should be grouped.

Much practice both in observation and in production will make a class quite expert in the use of both paragraphs and sentences without any metaphysical definitions whatever, and in the primary grades no attempt

at definition should be made, except by appearance and function.

Need of Progression. — Necessarily with growing power the treatment of these units becomes more and more systematic and logical. One of the serious defects of many language books is the lack of progression. The last part is on the same plane of difficulty as the first. The only progress clearly sought for is in the knowledge of the merely mechanical or technical requirements of written composition. Progressive power to think clearly and to organize thought is not developed. And yet this is one of the most important functions of the language lesson.

Complete Discourse. — From the paragraph easy steps should lead to the larger unit, the whole discourse. First should come the study of the literary model, the analysis and representation in outline of some selection readily grasped by the pupils. After considerable practice in this exercise the construction of a story or a description from an outline given on a topic similar to the one studied follows naturally. This should be followed by the making of original outlines and the writing of stories or other literary forms from them. With the younger children it is well to make the first studies in coöperation with the teacher, upon the blackboard. Later, individual productions should be made.

Clarifying Thought. — Many devices might be mentioned as helpful in clarifying thought for writing. The observation of nature and the making of notes from time to time, followed by a careful coördination and arrangement of parts, and finally a full written account of what was observed, is an excellent exercise. Another is the

collection, by the class in coöperation, of facts about some topic in geography or history or literature, combining these into a series of carefully edited chapters, making a coöperative book.

Motor Activities. — One of the very best means available to all for clarifying thought is through some form of manual expression, utilizing the motor activities. This truth is universally recognized in schools for the feeble-minded, where the main reliance for awakening dormant minds is the employment of the muscular sense. It is also especially valuable with foreigners, to whom frequently the thing made by hand gives the first dawning of comprehension. Modeling in clay, picturing with pencil or brush, representing by cutting from paper with scissors, constructing with carpenters' tools, so clarify impression that clear expression follows readily. When a child has made a thing, he knows it. When he knows it thoroughly, he can usually tell about it. The so-called "sand table," a long table on which may be represented in various media continued stories, or entire historical and geographical scenes, has cleared the minds and loosened the tongues of hundreds of children.

There are many other devices, but it is not my purpose to treat of devices. Those I have given are merely typical and suggestive of the necessity of developing good thinking through the language lesson.

Free Expression. — *Fourth.* Some ways of stimulating free expression have already been indicated. When interest has been aroused and a desire for expression created, let the expression come. Guide it. See that it is profitable, but do not check it. The art is never learned but by use. The flow should be directed into

the proper channel, but if there is no flow, of what use is the channel? In all grades much oral speech should be encouraged, both because of its own supreme importance and as a preparation for the written work.

Place of Rules. — *Fifth.* Instruction in technic and in conventional forms should be given as needed, after free expression has been secured and after some literary interest and appreciation have been developed, not before. Throughout the elementary grades such instruction should be given only as it is of manifest service in expressing thought or in appreciating thought as expressed by others. It should be incidental, not, however, accidental. It should be systematic and thorough. It should include all the mechanical rules of correct form, — punctuation, the use of capitals, the correct use of many word forms, regular and irregular, often misused, the meanings of words, and especially the conventional forms of letter writing. To the average citizen letter writing is the only literary exercise that is at all practical. Most people use no other. Hence it should be very carefully and well taught, not in a few lessons " bunched " in a single chapter of a language book, but continually, through practice under instruction. The instruction should include, not only the correct forms of opening, closing, and the like, but should suggest what to say in various kinds of letters.

Developing Vocabulary. — *Sixth.* Making a child's vocabulary fuller and more exact is a somewhat difficult task.

First, the children should be interested in words. They should be led to see the varying shades of truthfulness in words used to convey ideas. That is not difficult, for

a word is a very vital thing, and if presented rightly, is as interesting as a bird or a pebble. The chief source of a vocabulary that marks the user as cultivated is literature. Much reading of good literature necessarily gives the knowledge of a choice and varied vocabulary.

Professor Percival Chubb, in his excellent book, "The Teaching of English," observes that through the use of standard folk lore and of rhymes such as those of "Mother Goose" even little children are made familiar with literary language. Hence children's minds should be steeped in these old tales and verses, that they may start with more than the common colloquial vocabulary.

Telling good standard stories to children, to be retold by them, is one of the best exercises for developing a good vocabulary. This is especially valuable for young children whose reading is necessarily very limited. In telling such stories great care should be taken to use the literary language in which they are dressed. Children in retelling are sure to repeat these literary words.

With young children, and with foreigners especially, a very good plan is to write the unusual words on the blackboard, that they may appeal to the eye and thus aid the memory. Children will unconsciously employ them in the right places. The teacher telling the story, without interrupting the narrative or saying anything about the words, writes on the board a few such words, as she uses them. As the story is told repeatedly more words may be added. It will be found that the children will use this visible vocabulary with surprising accuracy.

For example, suppose the story to be the following old Arabian fable:

A thoughtful fisherman who had caught a very little fish was putting it into his basket.

"Oh, fisherman," said the little fish, "I entreat you to restore me to my house in the water; I am so little that I shall scarcely be a bite for you. When I grow larger, I shall make you a feast."

"True," said the wise fisherman, "but where shall I find you when you have grown larger?"

The teacher in telling this story for the first time might write on the blackboard such words as *thoughtful, fisherman, entreat, home, scarcely.* At a second telling she might add *feast, wise, grown, restore, larger.* These words would be sure to be used by the children, not only in retelling the story, but also as a part of their permanent vocabulary.

In the higher grades especially, it is well to call attention to the careful and exact use of words by some skillful author. How does he produce the effect that they admire? What would be the effect of substituting other words? Let them try it. For example, take this selection from Henry W. Grady:

"Let me picture to you the footsore Confederate soldier, as buttoning in his faded gray jacket, the parole which was to bear testimony of his fidelity and faith, he turned his face southward from Appomattox in April, 1865. Think of him as, ragged, half-starved, heavy-hearted, enfeebled by want and wounds, having fought to exhaustion, he surrenders his gun, wrings the hands of his comrades in silence, and, lifting his tear-stained and pallid face for the last time to the graves that dot old Virginia's hills, pulls his gray cap over his brow, and begins the slow and painful journey."

Have the children study the following words to see just what each adds to the picture:

footsore	faded	fidelity	southward
ragged	half-starved	enfeebled	exhaustion
surrenders	wrings	tear-stained	graves
old	pulls	slow	painful

Then let them try to substitute some other word for each of these and judge the effect.

The older pupils also may profitably spend considerable time in the study of synonyms. The spelling book frequently gives lists. Especially should the children in all grades be stimulated to give particular care to the choice of the best word in each case to express exactly what is meant. It should become a matter of rivalry and pride. It may even be developed into a game. "Who can find the largest number of words that express the idea of strength? What are their differences of meaning? Show these by use in sentences."

Neglect in Higher Grades. — When formal grammar is taken up in the higher grades, it is quite too common to allow constructive language work to take a minor place. This is a sad mistake. Even in the higher grades it is of vastly greater consequence that the children acquire increasing power to use language well than that they learn the rules of grammar. Especial care should be exercised here to see that the grammar does not crowd out the language lesson. New and interesting exercises should be introduced, suited to sustain the attention of older children, who should be encouraged to write in various styles, in imitation of admired authors, and upon various topics.

Correlations Needed. — The language exercise should be closely correlated with history, geography, nature study, and especially literature. Much of this correlation necessarily will be incidental, particularly in oral recitations.

All Written Work the Best Possible. — All written lessons should be in the best English that the students can command. This should be a rigid requirement. The pupils should understand that a paper sloven in style, careless or incorrect in vocabulary, will not be accepted. This requirement strictly enforced will do more to develop the habit of using good English than any number of formal compositions. These may not be neglected, however. They are very necessary, but in life out of school one's English is judged by his use of language in expressing his thoughts upon all subjects in conversation and in letters. Very few indeed ever have occasion to attempt strictly literary composition. This fact should be a guide to the teacher.

Every Lesson a Language Lesson. — All teachers are of necessity teachers of language and all lessons should be language lessons. Indeed, every lesson is a lesson in language, good or bad, for it is by expressing, not certain selected thoughts, but all thoughts, that habits of speech are formed.

Caution. — A caution, however, is needed here. Language is used in expressing thought. In our eagerness to secure correct expression, we must not ignore the thought; clear thinking must precede clear, fluent expression. In their anxiety to correct error, teachers sometimes so annoy and interrupt children as to stop the thinking and thus cut off the means of instruction.

The correction, if needed, should not break into the current of thought, but should come after the statement has been completed.

Résumé. — By the employment of good models of oral speech and literary composition, by stimulating thought that demands expression, by training to lucid and logical thinking as the basis of lucid and logical expression, by securing abundant and free expression, both oral and written, and by teaching inductively the necessary principles and laws of correct expression, it is possible to secure for most children a fair degree of the inestimable power, fluently, clearly, effectively, and even elegantly to express their thoughts.

CHAPTER VI

English Grammar

Grammar treats of the science of language. It consists in a properly classified statement of the rules that govern correct speech and of the facts and principles underlying these rules.

The Laws of Speech. — The "laws of speech" in their origin differ wholly from the " laws of nature," which are a statement of the mode of action of natural forces and are inherent in nature, and hence inviolable and unchangeable. They differ also from statute laws, which are enactments made by legally constituted authorities for the control of the conduct of those lawfully subject to them, and hence are arbitrary rather than natural, are not inviolable, but may be changed by the proper authorities.

The laws of grammar are arbitrary rather than natural, but they are not enacted by any legally constituted authority. They are the result of convention and are drawn from the usage of " standard writers," which has been generally accepted as correct. Hence they are not only violable, but are in many instances attended with a degree of uncertainty, giving rise to differences of opinion as to what is correct usage. Moreover, they are subject to material change from time to time. For example, Shakespeare and the Bible present many instances of the double negative, in modern grammars universally pronounced incorrect.

It is sometimes said that we have no English grammar. This, though an extreme statement, has a certain basis of fact. Along the old lines our grammar has been reduced pretty nearly to the minimum. The bulk of our modern grammar is to a considerable degree traditional and artificial. It is made up of more or less vain attempts to make it appear that the simpler present-day forms are to be treated like the complex forms they have displaced. The great modern changes in our language are in the line of simplicity and economy. Inflections have well nigh disappeared and easier means of expressing variations of relation have succeeded them.

For the six cases of the Latin and the five of the Greek, to show the relations of nouns, we have two forms only. Instead of the three inflectional voices of the Greek verb, ours has none, the relations formerly so indicated being expressed wholly by the use of additional words. Of the six modes with inflectional forms of the Greek we have two, and when the fast-disappearing subjunctive sleeps with its fathers, we shall have none.

Whether the verbal expressions made up of the stem word with prepositions or auxiliaries will permanently be classified under the old inflectional names, remains to be seen. Probably, as the present tendency is decidedly toward simplicity, they will gradually be dropped. Indeed this is to be hoped. I believe that such elimination would mean no loss whatever to the English language, or to the student, but on the contrary would set free an immense amount of energy now wasted in trying to fit obsolete or obsolescent names to new and more virile forms.

As a matter of curiosity let us see what inflectional forms remain to us. Of the regular verb there are these:

love, loves, loved, loving, — four. Of the irregular verb *be:* be, am, is, are, was, were, being, been, — eight, the largest number.

Of the noun: boy, boy's, boys, boys', — four.

Of the adjectives and adverbs, comparison only.

What slight material is this for the building of a grammar of the proportions of a Greek grammar, with its five cases of nouns in each of the three numbers, these multiplied by three genders for adjectives; its three voices of verbs, each with its six moods consisting of six tenses of three numbers each and three persons to each number. Of course there were many repetitions among these forms, otherwise even the Greek mind would have staggered underneath the load. Theoretically it was necessary to have nine hundred and seventy-two inflectional forms of a regular Greek verb.

Truly the power of tradition is mighty among us that we still keep above ground the ghosts of so many of these forms. Still for the present we must teach, and children must learn, the conventional forms and be thankful that they are no more numerous.

Functions of Grammar. — To the trained adult mind the study of grammar has certain higher uses which may only be referred to here. Grammar bears a close relation to both history and philosophy. The grammar of a people is an index to the mode of mental activity peculiar to that people, which is, naturally, largely responsible for its ideals, its philosophy, and its achievements. For example, the German retains many inflections that have been discarded by his livelier neighbors, the French and the English speaking races. This is in harmony with his natural conservatism. He indulges in long involved sen-

tences with the key word left for the end, so that when, after a comfortable ambling through the intermediate words and phrases he at last utters it, he has the thought complete, well rounded, guarded before and after. His sentence is like himself, comfortable, leisurely, but logical and complete.

The Frenchman, on the contrary, rushes headlong to his verbal fate. Not seeing the end from the beginning, he utters the words that come to him, as fast as possible. When he reaches the end, he has said it all, it is true, but without the substantial, sure, and rounded comfortableness of the German. For that very reason he is more brilliant, more surprising. He has no time in his verbal "joy-riding" for inflections, so he has cast them nearly all away, and as he rushes on to an undetermined end he drops epigrams like fireworks to dazzle and delight us. His work and his sentence are expressions of himself. These are merely patent illustrations of the association of a people's grammar with its psychology.

Training in Logic. — But grammar has its own direct uses to the student advanced enough properly to pursue the subject. Chief among these is his training in logic. When properly studied, it leads to the analysis of thought itself. In this it goes far beyond the language lesson as described in the preceding chapter. In grammar, the sentence, which in the language lesson was recognized as a whole, by appearance and manifest function, is recognized by structure as well. The fallible judgment of the language lesson becomes infallible. The thought also, of which the sentence is the complete expression, is evidenced by structure. The beautiful and complete wedding of two ideas into a new unit, a thought, is a

revelation of perfect logic, of the greatest value to a maturing mind. This once grasped, his own speech rests upon a new and firm foundation of law. The vague gives place to the exact, and his growth in language power keeps pace with his natural growth of body and soul.

" Consider for a moment what grammar is. It is the most elementary part of logic. It is the beginning of the analysis of the thinking process. The principles and rules of grammar are the means by which the forms of language are made to correspond with the universal forms of thought. The distinctions between the various parts of speech, between the cases of nouns, the moods and tenses of verbs, the functions of participles, are distinctions in thought, not merely in words. Single nouns and verbs express objects and events, many of which can be cognized by the senses; but the modes of putting nouns and verbs together express the relations of objects and events, which can be cognized only by the intellect; and each different mode corresponds to a different relation. The structure of every sentence is a lesson in logic."—JOHN STUART MILL.

Training in Appreciation. — The study of grammar also opens the eyes of the student to many of the excellencies of admired authors. Through his knowledge of the structure of language and of its laws he is able to see to what extent and how the art of literary expression is based upon science. For example, style is often dependent upon an author's habitual use of certain grammatical forms. To Irving's use of the long, loose, compound sentence is due, in part at least, the charming ease of his narrative; while Victor Hugo produced his peculiar, forceful staccato effect by employing succes-

sively short, almost sharp, simple sentences. Studying grammar from this point of view quickens the student's literary appreciation and makes him a more intelligent reader.

The teaching of grammar should make manifest these various functions of the subject, higher as well as lower, and should thus make it a broadening and enriching study, and not merely a series of exercises upon arbitrary or traditional conventionalities.

CHAPTER VII

English Grammar

METHODS OF INSTRUCTION

Grammar for Children. — In discussing method in teaching grammar it is important to distinguish between methods profitable for adult minds and those suitable for the young and immature. Abstruse discussions of grammatical theory and the making of fine distinctions, especially of definition and nomenclature, are utterly futile in teaching children. Whether the word " when " used to join a dependent clause to its principal clause is a conjunctive adverb or an adverbial conjunction is of no moment to a child. The important thing for him to know is function. " When " thus used performs the office of a conjunction in that it joins clauses. It also imparts an adverbial sense to the dependent clause. The duality of function is all a child needs to know.

Treats of Function. — A grammar for children, that is, for the grammar school, at first should treat chiefly of function. As children advance in maturity the study of structure should follow as explaining both the functions of words and of their various combinations and also the laws of grammar.

Grammar is of necessity an abstract study. The thing studied, the word as a part of a sentence, is at least twice removed from the object or the idea that it

represents and which alone appeals naturally to a child. In the sentence, " Reading maketh a full man," *reading* is to be studied grammatically as a verbal noun derived from the verb *read*, and as the subject of the sentence. To the child reading is an act. The word *reading* as the name of the act is once removed, from the act. *Reading* as a noun is twice removed while *reading* as the subject of the sentence is still further removed. It is not easy for an adult always to grasp the difficulty that this abstraction presents to a mind still wholly busied with enlarging its knowledge of the material world. Hence grammars for children should advance very slowly into this unknown world of metaphysics. The function of a word in expressing an idea is the phase of its metaphysics first comprehensible to a child. In elementary grammars this should always be kept to the fore.

Definitions. — From this point of view many grammars begin at the wrong end. The definition, which commonly is the starting-point in each topic, should be the end. In pure science the definition is the conclusion of observation and generalization. It is the sum of the essential knowledge of a subject stated in the most succinct form. A full, complete definition is the end of knowledge. It can be comprehended only by those who know exactly the meanings of all the terms used in it. The scientific definition of the Chambered Nautilus, *Tetrabranchiate Cephalopod*, to the scientist is full of meaning. It places the animal exactly among all the animals of the world. But to the child who knows the meaning of neither *tetrabranchiate* nor *cephalopod*, it is sheer nonsense. Yet a child can know many inter-

esting facts about the creature and can even enjoy Dr. Holmes' beautiful poem.

Definitions Difficult. — Moreover, in grammar the definitions present unusual difficulties to the immature mind. The fact that grammar is not an exact science, but is based upon opinion and usage, increases the difficulty. It makes it necessary to define largely by function, and yet as some words have many functions, a brief but comprehensive statement even of functions becomes in such cases practically impossible.

This difficulty is made evident by attempts to define even the most common terms, such as *verb*, *adjective*, *transitive verb*, *sentence*. The only possible complete definition of a verb is beyond the comprehension of most children in grammar schools. Following the Century Dictionary, "A verb is a word whose function is predication." It is difficult to put this into any form comprehensible to children. Hence the authors of most grammars content themselves with stating a single function and leave the others to the imagination, or to the teacher. Of course, such a statement is not a definition at all. For example, the most common definition of a verb is "a word that states," which, of course, excludes the question and the command, and hence is inexact.

"Transitive verb" is practically indefinable to a child.

Indeed, the noun is almost the only part of speech that can be exactly defined in terms that children can readily understand.

I have dwelt upon this matter of definition because it is the bugbear of children, and when taught at the beginning of a topic, as is the usual way, presents to the

young student no adequate compensation for his toil. Even the child who has laboriously memorized it is placed in possession of no knowledge that is either exact or useful. But the *functions* of words and of groups of words may be so taught in the grammar school as to give knowledge that is not only exact but also useful.

Teaching should be Inductive. — It is evident from the above that the method of teaching definitions and principles, when the time has arrived for teaching them, should be scientific, that is, inductive. Every fact that may enter into a subsequent definition or statement of principle should first be observed in good literature, so that the final statement may be induced from the results of observation.

Definitions stated baldly to children, if learned at all, are memorized as words merely, without thought. They become meaningless rigmarole. This truth has long been accepted for all the physical sciences, but in teaching grammar we have been very slow in coming to it.

Logic of Old Grammars. — In the older grammars the treatment was indeed logical, in a poor sense, but without regard either to the interest or to the capabilities of the learner. Hence the blackness of darkness that comes over the imagination when memory transports us to the grammar class of our school days.

The plan pursued was in the main synthetic, until "parsing" and "sentential analysis" were reached. The books were divided into four parts, orthography, etymology, syntax, and prosody. A fifth, sometimes introduced after orthography, was orthoepy, more often treated as a branch of the former subject. We began

with letters, then we built them into words, then we learned to pronounce the words, then we studied the inflections and derivations of words. Finally, we made sentences of them. Then we turned about and tore down the sentences that we or other authors had built up, and studied the parts — analyzed the sentences, and parsed the words.

Through it all, thought was kept in the background. The words and combinations of words were studied with reference, not to the thought they expressed, but to their mechanical arrangement. It was the study of a purposeless puzzle with the play element left out.

The Use of the Diagram. — Then some bright genius discovered that the solution of this mechanical puzzle could be assisted by the use of a mechanical device, — this is the age of machinery, — and the " diagram " came into being. From the point of view held, it was a useful device. The " hanging of the words on hooks," as Colonel Parker used to call it, furnished something of the play element before lacking in the mechanical manipulation of sentences. But it took the child little nearer to the thought expressed by the words. Indeed, too often it served as a further diversion and rendered it well nigh impossible ever to get back to the thought.

Many and many a literary gem has been forever spoiled to the student by these mechanical processes of parsing, analyzing, and diagraming. It would be an interesting investigation to inquire by how many " Paradise Lost " has been all their lives regarded with dread, because of its use as a subject for parsing. Analysis, as has been said, too often was analysis not of the thought, but of the mechanical arrangement of words. Parsing was not

ascertaining just what part the individual words served in expressing the thought of the sentence, but was the arranging of a purely mechanical schedule of relations for the words themselves.

Analysis of an author's sentences, to get at his meaning and to see how he has utilized his verbal materials in expressing his meaning, is dealing with a living subject, not a dead one.

Method in teaching Grammar. — How, then, should grammar be taught to secure to children its real values, — ability better to understand literature, ability to judge of the correctness of their own language, and ability to think clearly?

Begin with the Sentence. — The approach should be by way of the sentence rather than of the letter or the word. Fortunately this approach has been adopted by most modern grammars. It is a step toward the sane teaching of the subject. The sentence expresses the thought, and hence makes an immediate appeal to the children, whereas the minor elements, — the words or letters, — expressing single ideas or fragments of thought when used out of association, make no such appeal. The letter *b* alone means little. As an element in the word *blue* it has acquired some meaning, but still very little for a child. *Blue*, as the name of an abstract color, means a little more than *b*. *Blue sky* begins to convey a positive impression. But in "The sky is blue," we first come to a holding thought, and here, too, the words first get their real force.

An adult possessing all the elementary knowledge can turn again upon the elements of expression and find an interest in the abstract study of them. Not so the child.

He must have the larger interest to carry the smaller. Interest him in the thought, and he will with profit study the tools of expression. But without that interest, his study of the tools is futile. Even if he is able to acquire some knowledge of the way they work, his time spent in the acquisition is wasted. There are more important things for him to do than to study a telescope that he cannot look through. In these days of complaint of overcrowded curricula, economy of time is a serious demand. We have no right to spend the time of children upon purely disciplinary studies, without valuable content, while there are so many subjects offering equal discipline that include real knowledge. Grammar may be given a valuable content even to children by approaching it through sentences that express thoughts interesting to them.

Subject and Predicate. — A sentence is a union of subject and predicate to express a thought. Hence these two main elements of a sentence must be studied. The union and separation of many subjects and predicates, simple and complex, long and short, should make clear to the children, not merely the formal and mechanical construction of the sentence, but the essential elements of thought itself. They should see that not merely is a sentence made up of subject and predicate, but that a thought is made up of these two elements; that they do not think clearly unless they can state their thoughts in terms of subject and predicate.

This exercise may well be followed by a reversal of the process, a synthesis of sentences from the elements. This can easily be made into an interesting game. The sentences should be chosen from well-known proverbs

or verses, so that the difficulty may not be too great. Then the subjects and predicates should be written separately, but not in the same order. The exercise consists in putting the parts together properly. Thus such proverbs as:

Birds of a feather flock together.
A rolling stone gathers no moss.
The race is not always to the swift.
Wisdom is better than rubies.

and many more may be written in two columns.

Birds of a feather	is not always to the swift.
Wisdom	gathers no moss.
The race	flocks together.
A rolling stone	is better than rubies.

The children should then make the correct connections and write out the sentences. The exercises should include complex sentences as well as simple ones.

After the component parts of a full thought, as manifested in the sentence, have been impressed upon the children beyond the possibility of loss, then is the time to separate the simple subject and predicate from their modifiers. This should be done at first without dwelling upon any other fact than that the various modifiers add to or change the meanings of subject or predicate. Thus, "The slothful man saith, 'there is a lion without,'" can be readily reduced to *man saith.* A class will see the incompleteness of this as an expression of thought, and will readily grasp the meaning that *the* and *slothful* add a meaning to *man*, and that "there is a lion without" is necessary to complete the thought — to tell what the

slothful man saith. Similar synthetic exercises to those proposed in connection with the first analysis may be used here also with profit.

When these fundamental ideas of subject, predicate, and modifiers have been taught fully, then is the proper time to study the parts of speech. To postpone this study until the sentence has received final treatment is in violation of both logic and psychology.

Parts of Speech. — What do we mean by a "part of speech"? Why are words classified as "parts of speech"? Simply because in grammar they have no meaning save as parts of speech. Speech stands for expression of thought in words. The unit of expression is the sentence. So when you speak of a "part of speech" you mean necessarily a part of a sentence. That is, a word considered grammatically is merely the expression of a part of a thought. With the exceptions of the noun used in address, and the interjection, which is not properly a part of speech at all, but is merely an explosive and thoughtless expression of feeling, a word cannot be used sensibly except as a part of a sentence expressed or implied. Hence, naturally, with the exception of the noun, the part of speech cannot be intelligently studied until after the nature of a sentence has been made plain.

Study of Relation. — The parts of speech should be studied as to their functions in the sentence, and as these functions are modified by the relations indicated, these relations must be studied at the same time, in order to make plain the functions, and hence the meanings, of the parts of speech themselves. As the relations of words are in many instances shown by inflections, it

follows that inflections must be taught as incidental to the study of relations.

For example, in the sentence, "Longfellow's home was in Cambridge," it is not enough to know that *Longfellow* is a name. That indicates only a part of the function of the word. Its relation to another noun, *home*, must be made clear. As this relation is indicated by the possessive ending *'s*, naturally inflection must be taught as related to function. That is, we cannot understand all the functions of words until we know how they are modified in form to express relation.

It is manifest then that both logic and psychology require that grammar be studied by beginners in this order —first, the sentence analyzed into subject and predicate, and, second, a brief consideration of modifiers; then, third, the parts of speech, as parts of the sentence, their relations and inflections.

Beyond this the order is of less consequence, as the students will have such a fundamental knowledge as will enable them to take up more difficult phases of the subject in the order of natural interest. Usually there will be a return to the sentence and a more minute analysis of it. In particular there should be a thorough study of complex and compound sentences and of clauses and phrases, which fill the functions of parts of speech.

This includes all of technical grammar that is profitable for the pupils of the grammar school, and this is not profitable if studied with any other purpose than that of making function manifest. Thought must always be to the fore. The instruction in the forms and the relations of words must never degenerate into a study of mere verbal mechanics.

Thought-compelling Material. — To that end it is of the utmost importance that the material used be thought-compelling material, so that the pupil cannot escape the *feeling* that he is studying the expression of thought. Of course, if the study is to be merely the study of mechanical relations, it is little less than sacrilege to use good literature for that end. If, however, the study is always of thought, the better the thought, the more valuable the study.

It is disheartening to think of boys and girls spending their time in school learning that "the big bulldog in Mr. Smith's yard barked," or that "donkeys bray," especially when we must believe that while they are learning those startling truths they are learning other facts no less useless.

Along with the technical study should go studies in literature showing how closely the structure of sentences is related to the character of the thought expressed, how a literary artist of necessity bases his art upon the science of grammar. This gives the study of grammar a motive that appeals to the children as no mere formal study of structure can do.

Whenever it will serve the purpose of clear illustration, connected discourse, such as a complete story or description, should be used instead of isolated sentences. The greater interest carries the less. This is a great psychological principle too often ignored. If a study of grammar is a study of the laws of thought in expression, and if the aim is to train children, both to comprehend the expressed thought of others and to think logically themselves, then it is worth while to study these laws as shown in the works of thinkers who were also artists in expression.

It is of vastly greater value to a class to search a description by Hawthorne that has interested and charmed them, and find the grammatical forms that have made the description possible and given it its clearness and beauty, than to find these same forms in disconnected sentences containing little thought and no interest. Moreover, the memory of the description or story will hold that of the grammatical forms, which otherwise would soon be forgotten.

The method of teaching grammar to older students is omitted from this book as not germane to its purpose. Naturally it would differ in many respects from that outlined above.

Résumé. — Grammar is the science of language. The chief aims of teaching this science are to develop critical power, to furnish a corrective of speech, and to train to logical and clear thinking.

All principles and definitions should be developed by induction and never baldly stated. The more abstruse topics and the finer distinctions should be omitted from an elementary grammar.

The method of instruction should require the analysis of thought rather than the discovery of conventional relations of words, and of structure as related to thought. To this end the material used should be drawn from good literature and should be thought-compelling, since the greater interest carries the less. This literature should be treated respectfully with a view to a better understanding of it through a knowledge of grammar.

CHAPTER VIII

Spelling

English spelling is "peculiar." It obeys no laws, follows few principles. It is a strange medley of the labors of philologists, pseudo-philologists, ignorant printers, and equally ignorant writers who have attempted to follow some real or imaginary auditory analogy. It is a mass of conventions resting upon no rhyme or reason.

Learning to spell is one of the immutable requirements of the school. By success in teaching spelling the school is judged, to a very large degree. Yet the educational value of learning to spell is so slight as to be negligible. Spelling according to convention satisfies no psychological need, no spiritual craving, no aspiration. The economic value of spelling is arbitrary and artificial. It adds not a cent's worth to the world's wealth. Yet, teach it we must. Spelling well is much like wearing modish garments; it has much to do with fixing one's place in the world of educated people. At least a lack of it at once places one among the ignorant.

These facts are so patent and so widely recognized that we have the Reformed Spelling Board maintained by the benefaction of a great "gift giver." The aim of this Board is to simplify spelling by removing some of its worst absurdities, but unfortunately their efforts thus far do not offer much hope of a scientific solution of the problem. The changes suggested by them are so

scattered that in the eyes of a disinterested observer they seem to add to the complications by giving new forms to learn, without such an exact classification as to enable us to use them, except by a sheer act of unaided memory in the case of each change suggested. The best that can be said of their efforts thus far is that they show good intentions.

So, for the present at least, and doubtless for a long time to come, the children in school must go on learning to spell the old forms, and the question for the teacher still is how to teach this conventional art most effectively in the shortest time.

There is little to aid in this. There are almost no rules of spelling that are even moderately reliable. Attempts to teach spelling by rule simply add to the child's troubles. A few analogies may be followed, but with timid steps for fear of the many pitfalls. The sole reliance is memory, and the sole aid is found in obeying the general laws of memory, such as association of ideas, interest, vividness of impression, repetition, recency.

Words that have no meaning to the children, and taught without relation, are sure to be forgotten, except by those rare persons who have a " gift " for spelling. And it is often the case that this peculiar gift is possessed by those having little intellectual power of any other sort.

The late Superintendent B. C. Gregory, as the result of a series of very interesting observations,[1] showed clearly that children most frequently misspell the common words which they have first learned by ear. This is natural enough, in view of the irregularities of our spelling, and the lack of agreement between the written form and

[1] "Better Schools," page 169 ff.

its phonic equivalent. When the word is learned first from the printed page, it is much more likely to be spelled correctly. The reason is obvious. Hence especial emphasis should be placed upon the spelling of colloquial words.

Spelling is altogether a writing exercise. From this a natural inference would be that spelling should be learned by writing only. But this is not the fact. Although the English language is by no means phonic in its written structure, still there is a close association between oral and written spelling, so that the oral exercise supplements the written, often with very great advantage.

There are, however, wide differences among people in this regard. The familiar terms " ear-minded " and " eye-minded " indicate this. Some are particularly sensitive to auditory impressions, others to visual. This has, however, nothing to do with phonics. It simply means that some children will remember the component letters of a word more surely, and hence will be able to write the word more accurately, if they have first spelled it aloud. Some, before writing a doubtful word, will fortify themselves by repeating the letters " to themselves." With others the visual impression is sufficient and the oral spelling seems only to confuse them.

This effect of speaking the letters, either aloud or silently, is probably due more to muscular memory than to sounds. This same muscular memory extends to the hands and arms and other muscles used in writing and results in a form of muscular habit which enables the educated adult to write words correctly, without thinking of the spelling and even without consciously seeing it. These facts must be borne in mind in teaching spelling.

CHAPTER IX

Spelling

METHODS OF INSTRUCTION

How then may children be so taught as to make the correct spelling of ordinary well-known words automatic, without wasting time that is needed for more important matters?

There is no royal road. The ordinary person learns to spell through a sheer act of memory. Hence the effective teaching of spelling must be secured through obedience to the laws of memory. The first and most important of these is the law of " The Association of Ideas." The spelling of words is more easily remembered if the words themselves are so used in relation to ideas that they leave a distinct impression. It is easier to remember the spelling of words used in interesting sentences and paragraphs than of words learned in " lists " without relation.

Next to the association of ideas, the most important of the laws of memory for the teaching of spelling is vividness of impression. The sequence of letters in a word to be spelled should be burned into the mind. Various means and devices may be used to effect this.

Hard words, words likely to be misspelled, should be spelled both orally and in writing: orally, to secure the right habit of feeling of the muscles used in speaking, — this is especially important for those children who speak the letters to themselves while spelling; in writing,

because it is in writing that the final test comes. If we used speech orally only, we should have no spelling at all.

But before spelling in any way, care should be exercised to secure close attention to the word as correctly spelled. Most people misspell words because they have not looked at them sharply enough to make sure of the letters used or of their order.

If the word in itself is interesting and conveys some idea that holds the attention, it is easier to secure correct spelling, especially if it is a word not known colloquially. But even in such a case, it is frequently necessary to make an especial effort to focus undivided attention upon the spelling itself.

Among the many possible devices that may be used to this end, I will mention but one, which has been used in different places with much success. It is a blackboard exercise, the entire class being at the board. It may, however, be modified, if the blackboards have not room enough for all, by having some pupils work at their desks.

The teacher writes a word on the board. The class all look at it for a brief space of time. Then the teacher erases the word. The class turn and write it. The teacher inspects the work. If any are in error, the error is not pointed out, but all are told to erase. The teacher again writes the word and erases. All spell it. This is continued until all have spelled correctly. This secures close attention and confidence, as the children are not told whether they have erred or not; and it also results in permanence of impression. It is an excellent device for correcting carelessness of observation, which is at the bottom of most bad spelling.

Should spelling books be used, and if so, how?

If all teachers had plenty of time and the necessary judgment properly to select and arrange words taken from the other school subjects, these words would furnish nearly all the spelling lessons needed. The written lessons themselves supply the best spelling exercises, especially if followed by rigid drill upon words misspelled. But unfortunately the average teacher has neither the time nor the training necessary to the preparation of adequate lists of words to be spelled.

Some years ago the spelling book became unpopular and bade fair to fall into desuetude. In many places it disappeared altogether and the sole reliance was placed upon the spelling required for the written work of the school. Here and there an exceptional teacher succeeded remarkably well. But, generally, the effort was not successful. Lists were neglected or carelessly prepared. In written work upon other subjects, the attention was so taken with other matters that spelling was often overlooked. Even in the best schools it was found that many important words did not occur in the regular written work. Hence there has been a general return to the spelling book, and of necessity; not, however, to take the place of the careful attention to spelling in all written exercises, but to supplement it, and emphasize it. It is found that intensive study is necessary; therefore the spelling book is bound still to be the symbol of the elementary school.

But there are spelling books and spelling books, books with all conceivable plans of association, and books with no plan at all. In general, those books are the most helpful in which words are grouped according to some

manifest relation of ideas. Phonic relations, of all, are of the least consequence because of the irregularity of the phonic elements of our language.

Words may be grouped more profitably according to similarity of meaning or function; as, for example, words expressing time, days of the week, months, seasons; words descriptive of color, or sound, or landscapes, or farm life, or city life. Good groups may be made of synonyms, of the various inflectional forms of verbs, of certain classes of derivatives. Except for review exercises and for occasional drill, sentences, paragraphs, or short literary selections having an interesting content make the best spelling lessons.

But teachers have to use spelling books, not make them, and they must make the best of those furnished, supplementing them by exercises drawn from the other school work, or better, supplementing careful attention to the spelling in ordinary written exercises by a discriminating use of the spelling book.

Dr. J. M. Rice, in a series of articles in *The Forum*, gave the results of tests in spelling made in many schools upon thousands of children. While these experiments did not solve many of the mooted questions, they did throw interesting light upon the problem as a whole. Perhaps the most important contribution of Dr. Rice to the subject was the evidence that in teaching spelling method made very little difference, and that beyond a small minimum the amount of time spent had very little to do with the results. Children who spelled ten minutes a day showed as great efficiency as those who spelled forty. The most important factor appeared to be the quality of the teaching. The reasons why time is so

negligible a factor were psychological, and cannot be entered into here. As a whole this experiment forced the conclusion that intensity of attention and systematic organization were the most important elements in the teaching of spelling.

Whatever the devices or methods used, we cannot get away from the fact that spelling rests upon memory, unaided except by the laws of memory.

CHAPTER X

Arithmetic

Meaning of Arithmetic. — Arithmetic is the key to an exact knowledge of the physical universe and to many of the relations of man to man. It is commonly defined as "The Science of Numbers." Considering the subject abstractly as an exact science, this definition is of course correct.

Arithmetic as taught in schools is a somewhat promiscuous aggregation of topics all treating more or less fully of number in the abstract, or of some one or more of its applications, either to the physical world or to the affairs of life. In general its function is to acquaint the young student with the more prominent characteristics of abstract number and of number relations, with the prevailing system of numeration, and with a few of the most important practical applications of number to human needs. It also seeks to make clear, to a very limited degree, the numerical basis of the physical world.

The treatment of abstract number and number relations in our school system is found in such elementary work as counting and the study of the four fundamental principles, in the consideration of the nature of factors and multipliers and of fractions and of powers and roots. The prevailing system of numeration is learned abstractly, first as applied to whole numbers and decimals, and afterward through its use in expressing all numerical

characteristics and relations. The application of number to the affairs of men is taught by means of various problems, following the treatment of each phase of abstract number, and especially in those parts of the textbook devoted to imaginary business transactions. The consideration of number as the key to the physical universe is found in the study of form and dimension, especially under such headings as, "Denominate Numbers," and " Mensuration."

Numeration the Basis of Thinking. Fundamental Principles. — (1) Numeration lies at the foundation of thinking. The absolute basis of thought is comparison of ideas. Such comparison is impossible without at least a rudimentary conception of number. I cannot think an absolutely solitary unit. To the idea in contemplation my own personality is added, and almost invariably at least one other object enters into the comparison. If all objects, ourselves included, were spherical, we could have no conception of a sphere. It is only by contrasting that particular form with other forms that we can know it. So we must know more than one, as more than one, in order to think at all.

Probably the maximum number that can be comprehended from the direct contemplation of objects does not exceed five. Three seems to be the limit among most savage peoples.

As the comparison of objects necessary for thinking gives the first notion of number, this notion grows unconsciously with the extension of the field of thought. But because of the limited power of the mind to grasp at once several objects presented through the senses, unless this vague number conception be aided and enlarged by

means of a system of numeration, the power of thought itself is limited and we have the reasoning power of the infant continued through life, as in the savage.

But with a system there is no limit to computation, not even the hypothetical limit to the number of existing countable objects. Both the infinitely large and the infinitely small become the commonplaces of mathematics.

Counting the First Step. — (2) It follows that the first step in the development of a systematic knowledge of number must necessarily be counting: that is, the assembling under a definite numerical system and nomenclature of several objects on no other ground than that of some qualitative likeness. Exact measurement, the recognition of the quantitative likeness of the objects compared, comes later. In other words, we first teach pupils to count things; as, for example, the children present, — it matters not how widely they differ in height or weight.

The notion of numerical progression through a considerable field having been established by counting, the next step is to exact calculation or measuring; quantitative relations take the place of qualitative; *how many* yields to *how much*, and ratio takes the place of counting. Frequently, perhaps in most cases, this stage will have been passed before the children come to school. This is especially true of those who have enjoyed the advantage of good kindergarten training.

In the chapters dealing with Method, I shall take it for granted that the counting stage has been passed by the children before the formal work of teaching arithmetic is undertaken in school, and that they are ready for the second step.

Number a Mental Product. —(3) Number is a mental product, not a physical condition. Things, but not numbers, exist outside the mind. Numerical facts are not the facts of physics. To quote Professor William James ("Psychology," Vol. II, p. 655): "The same real things are countable in numberless ways, and pass from one numerical form, not only to its equivalent (as Mill implies), but to its other, as the sport of physical accidents, or of our mode of attending, may decide. How could our notion that one and one are eternally and necessarily two ever maintain itself in a world where every time we add one drop of water to another we get, not two, but one again? In a world where every time we add a drop to a crumb of quicklime we get a dozen or more? Had it no better warrant than such experiences, at most we could then say that one and one are usually two. Our arithmetical propositions would never have the confident tone which they now possess. That confident tone is due to the fact that they deal with abstract and ideal numbers exclusively."

Counting and reckoning consist in the grouping of objects by the mind to any quantitative extent and in any numerical arrangement in such ways as to satisfy some need — to make possible the definite consideration of objects for higher uses.

Need of System. — (4) It is of comparatively little use to me to be able to think numerical relations even with perfect clearness, unless I can communicate my thoughts to others and establish with them relations on a numerical basis.

Hence a *system* of numeration establishes a common ground, a clearing house, of number concepts, so that the

number element may enter definitely and effectively into human relations.

Upon number systems (arithmetic in the larger sense), then, depend not only all higher forms and systems of knowledge, all extended thought, but also very many social relations, including all forms of exchange, whether of labor or commodities, whereby our wants are supplied.

The importance of these fundamental principles, simple as they are, will appear when we come to discuss methods of instruction.

Why teach arithmetic in school?

The Utilitarian End.—The ends of teaching arithmetic are two: one utilitarian, the other educational. The former is the end that appeals to most people and is the one usually put forward as the basis for a demand for more time and attention to this one of the three R's. Doubtless more criticism is passed upon the modern school because of the alleged failures of young people to meet the arithmetical requirements of business than for any other reason, not excepting bad spelling.

That there is some ground for this faultfinding is doubtless true. However, the value of full courses in arithmetic to the business man is greatly overestimated, and in many cases perverted; that is, portions of the arithmetic that are supposed to have great utilitarian value have little or none.

If arithmetic were to be limited solely to its "bread and butter" values, a very small book indeed would be required; and while much drill and much practice would be devoted to this irreducible minimum, still the time given to the subject would be greatly lessened.

But arithmetic has a further use — the educational — and the question as to quantity and method for this use is not easily disposed of. This will be treated later.

Minimum Practical Need. — What knowledge of arithmetic does the average business man need, and how can the school best supply it? He should be able to add, subtract, multiply, and divide integers, simple common fractions, and decimals extended to include the principles of percentage and simple interest, with a very few tables of denominate numbers. Ordinary business requires no more than this. Special lines of business have special requirements, as that of the broker or the banker or the surveyor. But to meet such special demands is not the function of the elementary school. Indeed, such particular equipment can be obtained best and most economically in the business itself; and most business men prefer it so.

Should we then omit all else from our arithmetic, considered on a purely utilitarian basis? Let us see what would be dropped.

I have before me two of the very latest and most radical grammar school arithmetics. One of them contains 378 pages of material for pupils' use. Of these, 205 are given to subjects not included in our list of utilitarian necessities, leaving a book of essentials containing but 173 pages. The additional pages are taken up with matter largely modern, but educational rather than utilitarian in purpose.

This matter is distributed as follows:

	Pages
Introductory problems — covering almost the entire field of calculations	28
Tests of divisibility	3

	Pages
Cancellation	4
Algebra	31
Geometry	37
Bookkeeping	15
Measurements	21
Proportion	5
Complex Fractions	3
"Applications of Percentage"	11
"Problems of Interest"	3
Partial Payments	2
Transportation	6
Astronomy	7
Longitude and Time	5
Mensuration	10
Squares and Square Roots	5
Cubes and Cube Roots	3
Metric System	6

In addition to this are given these tables — English Money, Money Units of different nations, Troy Weight, Apothecaries' Weight, Surveyors' Measures.

The other book contains 487 pages of matter for the pupils, including besides the essentials:

	Pages
Introductory Problems	14
Form Study and Measurements (Geometry)	83
Powers and Roots	10
Ratio and Average	24
Approximations	3
"Applications"	38
Divisibility	1
Algebra	28
Applications of Interest	13
Foreign Money	6
Metric System	9
Total	229

This book also gives tables for Troy Weight, Apothecaries' Weight, and Surveyors' Measure.

Both books, in addition to the many pages devoted to enriching the subject beyond the utilitarian essentials, furnish much valuable information on many subjects, by means of problems illustrating the different fundamental principles.

It is evident that the authors added this large amount of matter because of its supposed educational value.

The two books analyzed are exceptional in that they omit much traditional matter found in older arithmetics, originally placed there for the same reasons that other more modern foreign matter has been put into the newer books.

Following are the most common of these traditional subjects, found in nearly all arithmetics, excepting the most recent:

Equation of Payments, Alligation, Compound Proportion, Partnership, Series, Annual Interest, Duodecimals, Exchange. Besides these are the following, which are also still retained by the most modern books: "Applications" of Percentage and Interest, including Insurance, Profit and Loss (fictitious largely); True Discount; Commission; and Brokerage (obsolete in method); Stocks; Partial Payments; Addition, Subtraction, Multiplication, and Division of Compound Numbers, and also certain obsolete and special tables of Denominate Numbers.

Truly this is an array that in these days of curricula crowded with cultural studies needs justification.

It is not necessary to discuss the utilitarian value of the fundamental processes, or of those simpler branches

of arithmetical knowledge that I have mentioned as necessary for the business man. Some may, however, question the possibility of omitting the subjects mentioned as unnecessary for the business man.

Let us see. Obsolete methods of conducting business surely are not practically useful. This will leave out the greater part of the " applications of percentage " as given in the books, including Partial Payments, Commission, Brokerage, Profit and Loss, True Discount, and operations in compound numbers with obsolete or unusual tables and terms, such as Troy Weight, gill, stone, square, and the various barrels; also Equation of Payments, Alligation, Duodecimals, Compound Proportion and Partnership.

Equation of payments has not even a modern equivalent. The same is true of duodecimals, except for purely theoretical discussion, or in fields uncommon. No one outside of schools adds 6 lb. 5 oz. of butter to 2 cwt. 17 lb. and 3 oz. No one multiplies 2 mi. 3 roods, 2 rd. 11 yd. 2 ft. 9 in., by $7\frac{1}{2}$. In the cases requiring reckoning upon compound numbers, decimals or common fractions are used.

Not even the surveyor extracts square root or the lumberman cube root. I question whether any one who may read this article has ever had occasion to use either except in school. They are blessings for the learning mind alone, too precious for the coarser uses of the business man. Hence on utilitarian grounds these subjects all should go.

The teaching of the terms and processes used in only single specific lines of business cannot but be regarded as wasteful for the average child on " practical " grounds.

This eliminates such subjects as mensuration, surveying, and astronomical reckoning, including longitude and time.

What shall we say of algebra and geometry? And should such subjects as stocks, profit and loss, and brokerage be retained with modern methods substituted for the obsolete?

As to algebra and geometry, it is enough to say that the average business man is wholly ignorant of them, and that they could not be applied to the solution of the simple and manifest problems which constitute almost the whole mathematical demand of ordinary business. Their educational value is another story.

As to the practical importance of teaching modern methods of certain lines of business in substitution for the obsolete methods of the older textbooks, this may be said: Much may profitably be taught incidentally as to business principles and methods, through problems given to illustrate the fundamental principles. This is not only unobjectionable, but is very desirable. It is one of the ways of imparting a sense of reality to school work for the child. Indeed, the choice of problems, vital in character, is one of the admirable characteristics of the newer books. But to introduce into arithmetic on utilitarian grounds a subject that is chiefly cultural is objectionable, unless it be a subject of very general usefulness. Are any of the above-named subjects of sufficient value even in their most modern form to justify their retention in a "practical" arithmetic?

Of the "applications of percentage," insurance is possibly of sufficient general interest to justify a reasonably full treatment.

The number of people engaged in business requiring the payment of commissions is so small comparatively that any considerable amount of space for this subject is not justified on a bread-and-butter basis.

Exchange is too vague and too limited in use to deserve a large place. Brokerage is merely simple percentage. Of stocks it may be well to teach just enough to enable a pupil to understand quotations. Taxes and duties affect all and should be taught thoroughly.

As compound interest is reckoned in savings banks, the banks of the many and the ignorant, it is doubtless well to teach enough of it to enable depositors to figure their interest. All methods of computing simple interest but one, the one employed in banks, may be omitted.

The use of the metric system among us is still, and is likely to be for long years to come, limited to technical treatises on scientific subjects. The prospect offers no justification for teaching it in elementary schools, on economic grounds.

Hence we are forced to the doctrine that on utilitarian grounds alone the only portions of arithmetic that should be retained are the fundamental "principles," simple fractions with denominators that can be reduced to a common denominator by factoring at sight; decimals; percentage, and interest, including just enough of the "applications" to furnish the necessary drill and practice; one method of computing interest; taxes and duties; enough of compound interest to enable the savings bank depositor to understand his bank book. To these should be added the more important tables of denominate numbers.

This would make a small book and save time, while

it would undoubtedly encourage more persistent drill upon the subjects taught and, probably, would secure greater accuracy.

Cultural Value. — Let us consider now the cultural value of arithmetic and determine, if possible, how many and what subjects should be retained in it on this ground.

How may arithmetic serve the general education, the culture, of the child? In two ways: one by "training his mind," securing accurate and reliable processes of mental activity, — in brief, by teaching him to think; the other by enriching his mental content, that is by giving him knowledge not merely for immediate utility but for broadening his outlook, extending his sympathies and supplying apperceiving centers.

We must bear in mind that in order to justify the attempts to secure these ends through the study of arithmetic it is necessary to show that this subject furnishes the best and most economical means for securing them. Otherwise they should be cut down or omitted and more efficient cultural agencies substituted.

Arithmetic is the logic of the child. It is almost the only means available for teaching him the certainties of logical processes, the reliability of the syllogism. It is the only field of absolute truth where determinable effect always follows determined cause. Dr. David Eugene Smith in "The Teaching of Elementary Mathematics," p. 25, says:

"The fact that the child finds a positive truth an immutable law at the time in his development when he is naturally filled with doubt, with the desire to investi-

gate, and with the feeling that he must put away childish things, has a value difficult properly to appreciate. He is not sure that every flower has petals, that every animal needs oxygen, that 'most unkindest' is bad grammar, or that Columbus was the real discoverer of America; but he is sure, and no argument can shake his faith, that whatever may happen to the universe in which he lives $(ab)^2$ will always equal $a^2 + 2\,ab + b^2$."

But this particular mental power is best obtained through dealing with numbers as abstract rather than through the solution of difficult business problems. It is the exact result of the action of known causes that gives the training in deductive or mathematical reasoning. There may be, however, some mental gain from the solution of even individual problems. Upon this point I again quote Dr. Smith:

"So Arithmetic may, even by obsolete problems, train the mind of the child logically to attack the everyday problems of life. If he has been taught to think in solving his school problems, he will think in solving the broader ones which he must hereafter meet. The same forms of logic, the same attention to detail, the same patience, and the same care in checking results exercised in solving a problem in greatest common divisor, may show itself years later in commerce, in banking, or in one of the learned professions. Hence, Arithmetic, when taught with this in mind, gives to the pupil not knowledge of facts alone, but that which transcends such knowledge, namely, power.

"It must not, however, be thought from its name that this culture phase of the subject is of value only as a luxury, like the ability to dabble in music or painting.

Just because it is the child of the man in poor or modest circumstances who must make his own way in the world, it is for the common people that this culture phase is most valuable."

Still, it seems to me evident that the solution of complicated problems tends to divert the attention from the deductive processes to the practical aspects of the questions, the assembling and assorting of the causal facts.

Algebra. — Unquestionably the most valuable part of arithmetic for the cultivation of reasoning power is (if I may be allowed), not arithmetic at all, but algebra.

The tendency of modern books to introduce, early, algebraic terms and methods, the unknown quantity and the equation, cannot be too highly commended from the cultural viewpoint, because the former deals with specific instances, the latter with generalizations. Despite all the general statements appearing in the form of rules, an arithmetical statement of fact stands for itself alone; $2+3=5$ remains that and nothing more, while $a+b=c$ stands for an infinite number of possible terms, for all of which it is equally true.

Dr. Oliver Wendell Holmes, in the "Autocrat," tells us:

"I was just going to say, when I was interrupted, that one of the many ways of classifying minds is under the heads of arithmetical and algebraical intellects. All economical and practical wisdom is an extension or variation of the following arithmetical formula: $2+2=4$. Every philosophical proposition has the more general character of the expression $a+b=c$. We are mere operatives, empirics, and egotists, until we learn to think in letters instead of figures."

Some of the subjects rejected as not of "practical" value belong properly in algebra. Such subjects as proportion and series, awkward in arithmetic because of lack of suitable terms, are simple in algebra. Indeed, if these and other such subjects are to be retained in arithmetic for their cultural value, it is quite important that the algebraic method of teaching them be used in order that they may furnish the desired training in logic.

Truly the argument in favor of the retention of subjects that cultivate the power to think is strong. This is the highest power of the intellect and it is none too common, while no subject can be introduced into the elementary curriculum so well calculated to train it as the "back part" of the arithmetic.

In the higher grammar grades a definite course in elementary algebra is of great value, especially to the many students whose schooling ends with the grammar school.

Geometry. — The study of the elements of geometry, usually introduced as "form study" and mensuration, may be classed with that of algebra. Its chief value rests upon the importance of a knowledge of form and dimension to a comprehension of the physical universe.

Constructive geometry and mensuration, as usually found in the arithmetics, appeal not so much to the reason as to the imagination. They tend also to substitute an exact knowledge of the environing world for a vague and comparatively useless knowledge, while deductive geometry, even as introduced in arithmetic in the application of formulæ and other generalizations to the solution of problems in mensuration, shows a plain path to abstract reasoning. Problems in geometry,

moreover, can be offered that will be " practical " without detracting from their value in training to think.

So much for the " unpractical " subjects that cultivate the reasoning power. The test question, " Could the same result be secured more effectively and economically by any other means? " must be answered in the negative. These are the subjects, *par excellence*, for teaching children to think, and on that ground their presence in our arithmetics is justified.

Enrichment of Content. — The second of the cultural values to be obtained through the study of arithmetic is the enrichment of the mental content, the enlargement of the field of knowledge. What subjects not required on economic ground should find a place in arithmetic because they represent valuable knowledge of the world and of human affairs that can be given best in connection with the study of number relations? This offers a wide field of investigation, upon which we can only touch here, limiting ourselves to the traditional subjects referred to above.

Of these, the applications of arithmetic to certain special lines of business are the most numerous. There is indeed strong reason for acquainting children with the general outlines of some of those business operations which are of universal interest, even though comparatively few people are directly engaged in them. An example is the corporation with its issues of stocks and bonds. Although few of the children are likely to have any active connection with such corporations, all citizens should know about them. They are now common subjects of discussion in the press, and of legislation, upon which universal intelligence is demanded. Besides, they

are the most common form of property for the investment of savings, and they are explained more naturally in connection with arithmetic than elsewhere.

In connection with these, brokerage and commission may be taught with almost no additional effort. The essential features of banking, including the function of the clearing house, are of such universal interest that they should be included in the grammar school arithmetic.

Taxes and duties have also an economic value and belong in arithmetic on all grounds. On the other hand, such topics as partial payments, duodecimals, equation of payments, and compound proportion have no such universal application and should be omitted from the common school arithmetic altogether.

Among the topics relating to the physical world the same distinction may be made.

" Longitude and time " is of universal interest, and although one may be able to tell time by the clock without understanding the reason, still knowledge of the laws that determine time for us is rich and pregnant knowledge. The only question is whether arithmetic or geography is the proper place for it in the school. In the present unsatisfactory state of geography teaching I believe that it is safer to trust it to arithmetic. Geography is even more crowded with poor relations than is arithmetic. Besides, the mathematical element is so evident in longitude and time, that it is a good subject through which to show the mathematical basis of the physical universe, one of the very large truths that children should acquire from the study of arithmetic.

The various topics included under " Mensuration "

have been discussed in relation to training the reason. They have no place in arithmetic on the ground of enlarging the field of general knowledge, except incidentally.

Cube root has no place on any ground and square root is doubtful. They are very hard in arithmetic and very easy in algebra and geometry.

The metric system raises a difficult question. As it is the system in general use among the Latin nations, and is frequently used in scientific treatises written in English, knowledge of it is very desirable, and, of course, if it is to be studied in school, arithmetic is the place for it. It is not difficult to learn and the pupil of the higher grades, with a very little effort, can master it sufficiently to be able to read books using it and to image dimensions expressed in it, by a rough comparison with our own system.

It is not necessary to discuss other topics specifically. The general principle applies to them all. If they are subjects of sufficient cultural value to demand a place in the course of study and if arithmetic is the most natural place in the course for them, there they should remain; otherwise, not.

Résumé. — A conception of number is fundamental to even the most elementary thinking. A *system* of numbers is essential to all the higher realms of thought, and also to effective communication among thinking beings.

Arithmetic has both a utilitarian and a cultural value.

For the former, more than half of the ordinary arithmetic is nearly or wholly worthless. The essential subjects to this end are the fundamental processes.

For the latter, the subject as a whole is very valuable,

especially in cultivating the power to reason. The most important subjects for this end are the fundamental processes and the methods of algebra and geometry.

Of the subjects falling under the head of "general information," the principles of special lines of business of nearly universal interest may properly be included in arithmetic, as may longitude and time and possibly the metric system.

Subjects should not be introduced to children through arithmetic for their cultural effects, unless arithmetic is the best avenue for securing those effects. Many of the subjects whose avowed aim is to acquaint the child with the sciences or with business usage should be omitted as foreign to the subject. But problems throwing light upon those subjects may be used profitably for illustration and for practice under the essential subjects, and thus incidentally may supply cultural elements.

CHAPTER XI

Arithmetic

METHODS OF INSTRUCTION

Ends to be Secured. — In considering methods of instruction in arithmetic, we must bear in mind the general results to be secured. (1) Facility and accuracy in the use of numbers, as applied to the simple operations which constitute the great part of ordinary business calculations; (2) such culture as can best be obtained in connection with the study of numbers, this culture falling into two classes: (*a*) the power to reason justly, a result of the logic of mathematical reasoning, inexorable, although limited in application; and (*b*) such knowledge of the physical world and of human relations as is expressed chiefly in numerical terms.

The classroom teacher usually has little to say as to what topics in arithmetic he shall teach. They are fixed in the course of study. He may, however, at least to a degree, so present even unnecessary topics as to determine the character of the results.

It will be manifestly impossible in a single article to treat other than typical subjects for the different grades.

The Time Element. — Time is a very important element in acquiring accuracy and facility in the manipulation of numbers, especially in the primary grades. The chief end of arithmetic teaching in the primary school is the mastery of the fundamental combinations

of addition and of the multiplication table. The accurate use of these should become automatic, so that it will be practically impossible for a child to make a mistake. Most arithmetics and most courses of study hurry this process. They crowd the tables together, without allowing time enough for each one to "soak in."

The development should be very gradual. Each combination and each table should be taught by itself and should be emphasized by such a variety of exercises that it can never be forgotten. The study of the multiplication table should be slowly and consistently cumulative. Fractions should be taught correctly at the same time, thus laying a foundation for their more intensive study later. It takes little additional effort, while learning that four times four equals sixteen, to learn that four is one fourth of sixteen.

The Utilitarian Ends. — First, then, how shall a child secure facility and accuracy in calculation?

Drill. — The teacher's one invariable means to this end has always been drill, by which is meant iteration, repeating number combinations over and over again until the brain paths become fixed and the action automatic. Unquestionably drill of this sort will be always an important means to this end. If the only elements of this so-called practical aim of arithmetic were rapid and exact addition, subtraction, multiplication, and division of integers, such drill might possibly suffice, although even then the psychological difficulty of loss of interest and consequent limitation of progress would of necessity manifest itself. Automatic processes are naturally self-limiting.

But even the most fact-loving of Gradgrinds is not

satisfied with the mere ability to combine and separate integers under the four "fundamental principles." It must be possible to use them in business problems, also with facility and accuracy. It must, too, be possible to deal accurately and swiftly with fractions, common and decimal. These requirements demand more than mere calculating machines. They demand the power to think, which drill alone cannot furnish. Here the first aim touches the second, and it becomes apparent that no mere mechanical drill is sufficient for even its own ends. So we must include some of the suggestions for the second end in our treatment of the first.

Method must vary with Age. — There is no uniform method of teaching arithmetic. The method must vary with the age of the children studying and with their differing powers to think in abstract terms.

In arithmetic, as in morals and in all the common affairs of life, there is a place for authority, as well as for reasoning. The power of self-direction is itself a growth. The young child must be told many things outright long before he can comprehend them. He must also do many things in obedience to authority until he is able to "reason out" a course of action. The fault of the old teaching lay, not in its use of authority, but in its abuse of it. Children were compelled to rely wholly upon it and hence lost the opportunity to acquire power to reason and to direct their own courses.

In teaching arithmetic, the transition from authority to reason must be gradual. At first only very simple things can be comprehended, even with the aid of concrete illustration and of motor activity. Counting is of necessity learned from authoritative statement, so

must be many of the facts of notation. Names are largely arbitrary. But the names of numbers once learned, the simple combinations may be made plain by concrete illustration. A child must learn to count two, three, and five through being told the names of the combinations. But he can and should learn that two and three are five in quite a different way. This combination he must see for himself if his knowledge is to be real.

With progress in power to reason, the value of authority gradually disappears and reason becomes more and more important. The child in the fifth grade may properly be told to divide one third by one half by inverting the divisor and multiplying. In the grammar grades he should know why this method will avail.

In general the inductive method is the ideal method for teaching arithmetic, but it must be used with discretion. With young children, induction in mathematics requires, not merely observations, but muscular effort and reaction.

Concrete Presentation. — Take, for example, the always difficult problem of "carrying" in addition and "borrowing" in subtraction. It can be taught by rule, by illustration, or by use of the objects, but with very different results. Add 23 and 19. By rule we say $9+3=12$, 1 ten and 2 units. Set down the 2 under units column, add the 1 to the tens in tens column $=4$. Some few children may comprehend this if tens and units have previously been taught concretely, not otherwise. But to most it is simply an order to be obeyed unquestioningly. This is the method of the older books and of many of

$$\begin{array}{r} 23 \\ 19 \\ \hline 42 \end{array}$$

those in use to-day, and I venture to say that there are many teachers in the schools who, until in their maturity they began to teach, did not really comprehend the simple reason for " carrying."

Another method is by illustration, rows of pictured objects in tens and units:

2 tens, 3 units
+1 ten, 9 units = 4 tens, 2 units
3 tens, 12 units

This unquestionably aids the comprehension, and more children will grasp the principle from this method than from the mere rule. But it is not the simplest or the most effective way. A very simple and easily procured material for concrete illustration is a box of sticks, such as are used in the kindergarten and in many primary schools. Wood toothpicks will do as well. Let the children tie up a hundred or more of the sticks in bundles of ten each (don't do it for them), leaving a considerable number single.

Then let them actually lay out the sticks, 2 bundles of 10 and 3 single sticks, and lay beside them one bundle of 10 and 9 singles, making in all 3 bundles of 10 and 12 single sticks. Have children tie up 10 of the singles into a new bundle and place it with the others, giving 4 tens and leaving 2 ones. The operations with figures should be carried on simultaneously on the blackboard and by the children on paper. Simple as this may seem, it is psychologically and physiologically sound. The em-

ployment of the motor activities and of the muscular sense strengthens and deepens the impression and aids in producing knowledge of the fact as distinguished from words.

For subtraction reverse the process. This, too, must be accompanied by a demonstration of the operation with symbols.

Possibly even a better material for the study of the periodic values of figures is real or imitation coins, cents and dimes and dollars, used in the making of change, to illustrate reduction of lower to higher, and the reverse.

This foundation, once laid by the development of "carrying" and "borrowing" in addition and subtraction, followed by sufficient practice to confirm the knowledge beyond the possibility of loss, serves for the entire structure of notation, including decimals, and for all the manipulations necessary under the four "fundamental principles."

This preparatory work, whose purpose is to secure actual comprehension of the relations indicated by the positions of figures in numbers, must be followed, not preceded, by drill.

Order of Presentation. — The order of presentation is this: First, a problem whose solution is carefully developed by every means necessary to its full comprehension. Then more problems of a similar sort, to be worked by the pupils, enough to clinch the instruction given and make it a factor in all future similar operations; then drill upon the abstract numbers used, to secure the desired automatic action.

Drill Abstract. — Drill should be bare drill, unembarrassed by terms or conditions or names not absolutely necessary to the statement of the problem in its

simplest form; that is, for drill, do not give problems upon so-called concrete numbers, but rather upon abstract, for instance, not such questions as:

$$2 \text{ apples} + 4 \text{ apples} = ? \text{ apples.}$$
$$3 \text{ marbles} - 2 \text{ marbles} = ? \text{ marbles.}$$
$$6 \times 3 \text{ boys} = ? \text{ boys.}$$
$$10 \text{ girls} \div 2 = ? \text{ girls.}$$

but rather:

$$2 + 4 = ?$$
$$3 - 2 = ?$$
$$6 \times 3 = ?$$
$$10 \div 2 = ?$$

The addition of a name to a number does not really make it concrete, but it does embarrass the solution by introducing an element foreign and unnecessary.

The application of these principles to fractions; to the study of lines, surfaces, and solids; to denominate numbers, and to monetary transactions, is evident. First develop the relations involved, and then drill until the memory will act mechanically.

Care must be exercised not to go beyond the point of interest even in the later drill. The moment interest ceases, the drill becomes dead and is likely to do more harm than good. Minds interested and alert are the requisite of valuable drill.

Limitations of the Concrete. — A caution is needed as to the limitations of the use of the concrete. Teachers sometimes develop subjects by means of sticks and squares and cubes and other schoolroom paraphernalia so continuously as not only to retard progress, but even to cause arrested mental development. The children have become so used to handling things to get

knowledge that their power to reason abstractly has been actually impaired.

The object should be used to give a clear image, and as soon as this has been accomplished, should be discarded. Its only use is to lead to clear thinking. When the children are able to image the combinations and to think the processes without the material aid, its use should be discontinued at once. Some children can dispense with these aids sooner than others. The teacher must judge. For instance, in teaching the relations of terms in numeration, units to tens, tens to hundreds, etc., by the use of objects as outlined above for "carrying" and "borrowing," it will seldom be necessary to carry the method beyond tens. If the tenfold increase from units to tens is made perfectly clear, the corresponding increases to higher places will be comprehended by most children without the concrete illustration. A few may need to have hundreds developed. The ability to reason should be the reliance whenever possible. The material aid should be used only when needed.

The above are merely typical instances, but the principles are of general application. If drill in all the simpler operations upon numbers were preceded by a thorough comprehension of the principles involved, and then were so abundant and of such character as to make those operations automatic and yet intelligent, we should have fewer complaints from business men that children nowadays cannot add.

The important numbers in most operations are the small numbers, and the important combinations are the simpler ones. These are easily learned when once they are comprehended.

CHAPTER XII

Arithmetic

Methods of instruction (*Continued*)

In mathematics the child finds for the first time certainty. Indeed, for the adult, mathematical fact is almost the only certainty, and mathematical reasoning is quite the only reasoning without an "if." Its scope is comparatively narrow, it is true, but its lines never vary.

The school has no higher office toward the intellects of pupils than to teach them to "reason justly." How may arithmetic aid in this work? Mainly through two agencies: (1) the inductive method of approaching all new subjects, leading pupils to make their own generalizations in the forms of definitions and rules of procedure; and (2) the application of principles taught to the solution of vital problems, and, especially in the higher grades, through the use of the equation and of the literal symbol to represent the unknown quantity.

In the older books the rule and the definition almost always were given at the beginning of all new topics. They rested on authority wholly. The reasoning power of the children was ignored and memory was the sole reliance, excepting in the application of the principle to the solution of problems, and even here the reasoning was only partial, the application to stated conditions of an uncomprehended rule or formula of procedure. To relieve this condition, Warren Colburn put forth his famous "Mental Arithmetic," which, with its imitators

and successors, accomplished great good, notwithstanding its excessive formalism.

The Inductive Approach. — Illustrations of the inductive approach have already been given on pages 130, 131 to show its use in developing facility and accuracy in the manipulation of numbers. Further illustrations are the following:

Denominate numbers should be taught at first with the measure in hand.

Fractions always present serious difficulties to children, which may easily be avoided by employing inductive instead of authoritative methods, while at the same time the pupils are being trained to think. If the three basal ideas of fractions are comprehended early by the pupils, all the later operations are comparatively easy, and the work becomes training in thinking instead of the mere following of rules. I refer to the facts (1) that every fraction is an aliquot part of an indicated unit, either integral or fractional; (2) that every fraction is a statement of a ratio, the quotient of one number divided by another, and (3) that for purposes of calculation each fraction is itself a unit, or a stated number of units, according to its use.

Some will doubtless say, "Of course, we always teach these things." Possibly, but the arithmetic books do not, at least, in such a way that the children grasp them, for to state them as they are stated here is not to teach them. On the contrary, to the ordinary child in school, fractions are a mystery not to be comprehended, and the only path through them is that of blind obedience to rule.

The first of the principles is more commonly well taught than the others. Through handling objects, counting by 2's, 3's, etc., "wholing and parting," dividing groups into smaller groups called halves, thirds, fourths, and the like, children in a modern primary school unconsciously acquire the notion that an aliquot part of any unit is a fraction.

Still the fixed-unit absurdity is impressed upon the pupil when the book is reached, and $\frac{1}{2}$ becomes the mysterious symbol of the unknowable. This is partly encouraged by such falsities as "compound fractions," in which $\frac{1}{2}$ of $\frac{1}{2}$, the simplest statement of relation, as simple as $\frac{1}{2}$ of 4, or $\frac{1}{3}$ of 6 inches, is misstated in its very name "compound." The remedy is of course to drop such misleading terms and return to the fact of relation, if necessary, using concrete objects, for example, slicing an apple into fractions of fractions. But whatever the means, the pupils should always be forced to keep in view the fact that a fraction is an aliquot part of the indicated unit, which may be any number, fractional or integral, and not merely *one*. The fact that a short method of finding $\frac{1}{2}$ of $\frac{2}{3}$ is to multiply numerator by numerator and denominator by denominator should not be allowed to blind the children to the fact that the "compound fraction" is a mere statement, *one half of two thirds*, which is one third. They should comprehend the relation.

The second principle is that a fraction is a statement of ratio. That is, $\frac{2}{3}$ means not only two of the three parts into which 1 is divided ($\frac{2}{3}$ of a fixed unit), but one of the three parts into which 2 is divided ($\frac{1}{3}$ of the unit 2,—2 divided by 3).

This can be made clear by much "wholing and parting"; first, of groups of objects, or of exactly measured dimensions, as inches, then of abstract numbers. It may be best to begin with easily divisible wholes, as 4's or 6's.

Further practice will develop the truth that the ratios of numbers are not affected by the introduction of equal factors into both or by their removal from both, as:

$$\frac{4}{2}=\frac{4\times 3}{2\times 3}=2; \quad \frac{12}{6}=\frac{12\div 3}{6\div 3}=2.$$

Much drill, both concrete and abstract, upon such combinations will lead the pupil first to see the relations and then to comprehend the process.

This imaging of the fundamental processes prepares the way for those more puzzling operations required for the addition, subtraction, and division of fractions. It makes possible the comprehension of the function of the common denominator, which usually is not comprehended at all by the pupil who performs the operation by rule.

As a further preparation for such operations, however, the third principle should be comprehended, namely, that each fraction is itself a unit, which can as readily be manipulated, increased, or diminished as an integer.

In arithmetical calculation, $\frac{1}{2}$ is as definite an entity as 1. This principle grows out of the second one, namely, that every fraction is a statement of ratio. It is most easily seen in improper fractions. Thus $\frac{4}{2}$ equal 2. The fraction is simply another way of expressing 2, and hence all the operations that may be performed upon 2 may likewise be performed upon $\frac{4}{2}$. Children can easily be led to see that in its nature $\frac{1}{2}$ is similar to

$\frac{4}{2}$, although it has no integral equivalent. With these principles firmly in mind the difficulties of treating fractions disappear.

For example, division of fractions is puzzling to most children. Even teachers sometimes are unable to see the reason for inverting the divisor and multiplying the fractions. Yet it is really as simple as addition to classes that have had the preliminary training outlined above. At least grammar school classes that have reached the formal study of fractions can easily image the process. For example:

$$\tfrac{3}{4} \div \tfrac{2}{3} = \tfrac{3}{4} \times \tfrac{3}{2} = \tfrac{9}{8} = 1\tfrac{1}{8}.$$

This by rule. The process is really as follows:

$$\frac{3}{4} \times \frac{3}{3} \div \frac{2}{3} \times \frac{4}{4} = \frac{3 \times 3}{4 \times 3} \div \frac{2 \times 4}{3 \times 4},$$

3×4 both being the common denominator and showing by its structure how common denominators are made. Dividing the numerator of the dividend by that of the divisor, we have

$$\frac{3 \times 3}{2 \times 4} = \frac{9}{8} = 1\tfrac{1}{8}.$$

In other words, the rule merely indicates a short method of dividing, the common denominator being "understood," that is, eliminated from the actual work, though constructively present.

Teaching to make Generalizations. — A process comprehended is vastly more interesting to the pupil than one performed by rule merely, and what is more important, it trains him to think for himself. There should, however, be both rules and definitions, but they should

be formulated by the pupils themselves after observation and manipulation. This cultivates that most important of all reasoning powers, the power to generalize; for definitions and rules are generalizations, having the especial advantage for beginners in the art of reasoning that they are certainties, not probabilities.

After the children have done their best at constructing definitions and rules, it is well to compare the results of their efforts with the statements in the book, to make sure of accuracy, and to insure the best and most economical form of statement.

If the work according to the inductive method at first seems slow, as compared with that under the rule, there need be no anxiety. Facility in later operations, due to a thorough understanding of the reasons for them, will much more than compensate for the earlier loss of time.

The generalized truth is a great time-saver. When once comprehended, its use avoids the necessity of repeating each time the process by which it has been reached. A child who has learned by observation the meaning of the word " triangle " is saved the necessity of describing it as a three-sided figure each time he would refer to it.

Of course, it is important that the development of a principle should not be continued after the idea is once firmly grasped. The power to think should be utilized as rapidly as it is manifested. Otherwise there will be loss of time and interest, if not actual arrest of growth.

Use of Unknown Quantity and Equation. — In order to save time and to insure the understanding of the processes, it is important that the unknown quantity

and the equation be introduced into the arithmetic quite early. The use of x for the unknown result is not difficult for grammar school pupils, and it opens the way to the time-saving processes which constitute one of the advantages of algebra over arithmetic. This, of course, both makes possible and requires the use of the equation.

$\frac{2}{3}$ of $6 = \frac{4}{5}$ of what number?

$$\frac{2}{3} \text{ of } 6 = \frac{4}{5} \text{ of } x; \quad \frac{12}{3} = \frac{4x}{5}; \quad 60 = 12x; \quad x = 5.$$

This particular problem could more easily be solved by inspection and analysis; it merely illustrates the method which may be employed with more difficult problems. The x makes it possible to use the unknown result as if it were a known number in the equation. Thus the whole problem is clearly pictured and the process becomes visible to the mind's eye.

The preparation for the use of the equation should be made first by means of tangible objects, as a balance with weights, or a scale of inches and feet, showing that the two members may be increased or decreased by addition, subtraction, multiplication, or division to any extent, provided both be equally affected, for this is the entire secret of the manipulation of equations. But once really grasped, it makes easy the solution of many arithmetical problems, and best of all, it requires and develops the power to think, by establishing rational principles through rational processes.

This phase of the cultural aim of arithmetic might be developed indefinitely, in application to the various topics. Especially might much be said of the orderly development of problems, stating them clearly and thinking them through; but surely enough has been said to

make plain the contention that work in arithmetic should be work in thinking, and not merely the performing of operations according to rule.

Enriching the Content. — The second phase of the cultural aim of the teaching of arithmetic is enriching the mental content, giving such knowledge of the physical and social world as may properly be given through this study. This was treated quite fully in Chapter X and need not be elaborated here. Suffice it to say: arithmetic must be taught as applied, to give both interest and practical value, and the choice of problems to illustrate principles supplies the opportunity for enriching the subject. Here is the weakness of most of the older textbooks. The problems are superannuated, disconnected, and unreal.

Problems for Cultural Value. — A few simple principles may be stated as to the character of the problems to be used.

(1) They should be vital. They should have a meaning to the children. They may be drawn from their immediate environment: from the home life, the school life, the games played, from the other subjects studied, as history, or geography, or manual training; from current events,—from any source of real and present interest. There are enough such problems available without resorting to the absurdities of the old books: "When will the hound overtake the hare?" In addition to the problems in the book, children should be required to gather material and make many problems of their own from actual conditions: the cost of a dinner, the building of a house or barn or rabbit hutch, the grading of a street, the profits of a newsboy. Their world is full of

vital material for calculations of nearly all the sorts found in a good arithmetic.

(2) There should be many connected problems, showing various relations. A series of real problems involving many arithmetical processes is much more interesting and requires more consecutive thought than many separate problems employing the same operations, and it imparts a more realistic view of life. Its content is richer.

For example, imagine a contractor figuring on the building of a house. Let the class draw the plans for the house to scale, doing their own measuring and calculating. Then let them take up the cost in detail: the excavation, walling, and flooring of the cellar, the building of the foundation, the lumber for the frame and covering, the flooring, plastering, and finishing of the interior, doors, and windows. Such a problem can be extended indefinitely, to include furnishing, for instance. The children should themselves make all the measurements and drawings, ascertain the current prices of all material, and estimate the total cost, including labor. The cost of the lot, and of such improvements as sewer, paving, and sidewalks may be added; also rental value. Or, the property may be sold for a partial cash payment and notes bearing interest. A fire may occur and damage be estimated and insurance considered.

The possibilities of such a series of problems are infinite. Practically the whole field of arithmetic could be covered. The limits are to be fixed by the degree of advancement of the children and by interest. As soon as interest wanes, a new topic should be taken.

For pupils unequal to such tasks simpler problems along similar lines may be used, as the laying out and planning of a school garden, the building of a trellis for vines, the making of kites and other toys.

In the study of the really practical branches of the applications of percentage many interesting series of problems can be made that will give knowledge of civic conditions and of business methods. Under taxation, for example, local conditions should be found out by the children: the valuation, what percentage of actual value; the expenses of the various departments of the government as the basis for taxation; the fixing of the rate upon the assessed valuation; the taxes paid upon personal and real property; the amount paid by individuals. (This last would better be imaginary.)

While studying interest, it may be well to organize a bank in the school with toy money and go through with the operations, the children finding out by inquiry outside how the business is carried on.

Interesting and valuable problems may be taken from geography, using census reports and other available means of information; comparisons of cities and states in population, property valuation, business done in various lines, figured in ratios and percentages; length of journeys, miles of railroad and steamship lines; manufactures, agricultural products, especially local industries, — all may be made to yield problems innumerable, while acquainting pupils with the world they live on and in. The alert teacher will find in the bustling, environing world an abundance of vital material for calculation.

A few of the newer textbooks contain such problems

and suggestions for more. These should be supplemented by similar problems drawn from the immediate environment and experience of the school.

The older books contain few such problems, if any. The teachers compelled to use these books should substitute for their problems, in so far as possible, others drawn from present available sources. These sources include the school and home life of the children, current events in the larger world, and practically all the other subjects in the school curriculum. Care must be taken, however, always to keep within the limits of natural interest. Many dry statistical problems found in some of the newer arithmetics are as truly a weariness of the flesh as the worst of the senseless ones of the older books.

Résumé. — I have endeavored to make plain how the teaching of arithmetic may be directed toward its three aims: (1) giving facility and accuracy in the use of numbers, (2) training the children to "reason justly," and (3) imparting such knowledge of the world and its life as is expressed largely in numerical terms.

The first end is to be secured by developing in the natural order of thought the various processes and then drilling on the operations until the simpler ones become automatic. The second end is to be secured by seeing to it that all processes are thought through, substituting the inductive for the authoritative method of approach, and in the higher grades by the use of the symbol for the unknown quantity, and of the equation. The third end is to be secured incidentally, through choosing for illustration and practice such problems as are real, vital, and drawn largely from the field of the children's knowledge and experience.

CHAPTER XIII

History

The First "Fad." — History was the first of the "fads" to find a lodgment in our common school courses of study. Until the latter half of the nineteenth century the younger pupils in the elementary school studied reading, spelling, and arithmetic, and acquired the art of writing. In addition the older pupils studied grammar, and, later, geography was introduced.

These subjects were justified from one or both of two motives, the "practical" and the "disciplinary." None of them were so taught as to be cultural in the broad sense. It is true, reading opened the door to the broadest culture and geography might have been used to bestow upon the children a wider horizon. But in fact, the practical and disciplinary uses of these subjects rather than their cultural possibilities constituted their justification and generally determined the method of instruction. It was not the province of the common school to busy itself with those finer phases of thought and feeling, that enlargement of view, that we call culture.

Scant Culture. — Indeed, throughout the entire course of schooling, including the college, culture received scant courtesy. In the higher institutions discipline was the aim. Even the practical was not considered. The secondary schools were given over to Latin, Greek, and

mathematics. And even these two ancient languages, which at the time of the Renaissance had brought to light an ancient culture and had established the new, had fallen from their high estate and had become mere disciplinary agents. The "Iliad" and the "Æneid" were simply proofs of the rules of accent and prosody set forth in the grammars. The "Anabasis" illustrated admirably the adverbial accusative. "Caesar's Commentaries" were perfect models of indirect discourse.

The colleges continued these disciplinary studies and added metaphysics in the subjects of logic, psychology, philosophy, and ethics with a theological squint. But in the latter part of the century came a great awakening, and history, the natural sciences, English literature, modern languages, the arts, entered with a rush until the curriculum became an overcrowded jumble, an unarranged syncope of human learning, out of which gradually, by correlation, by excision, by selection, an orderly educational course of study is coming, which will be practical, disciplinary, and rich.

In the common elementary schools history was the first innovation, a study not practical in the Gradgrind sense, and, as taught, not possessing great disciplinary value. It was informing and had a decided ethical purpose. Indeed it is to this latter function that its rapid extension in our schools was doubtless due.

History and the Civil War. — The sudden popularity of history was coincidental with the close of our great Civil War. Naturally and properly the history taught was the history of the United States. The intensity of feeling roused over our great conflict created a strong desire to train the youth to patriotism. Those who had

borne a part in the struggle naturally desired that their descendants be familiar with it in all its details of cause and execution. Naturally, too, the importance of a knowledge of the other great events of our national life was realized, and so it very quickly became a law in most States that the schools should teach the history of the United States.

A New Motive. — Thus the principle was established that public schools were directly concerned with citizenship as such. From this the step to the introduction of other subjects that are highly educational, and that tend to produce citizens richly furnished with all that makes for larger life, was logical and easily taken.

War in Earlier Histories. — The earlier histories for schools were little more than chronicles of dates and records of wars. The Civil War was the most conspicuous event and was treated in minute detail. Infants were set to judging of military campaigns. Sectional partisanship was everywhere manifest. In the North the southern contestants were wicked "Rebels." In the South the northern contestants were unprincipled, invading "Yanks."

Next to the Civil War the War of the Revolution filled the most space. Here, too, an exaggerated patriotism ruled; the wicked red-coated British were everywhere whipped by the brave, virtuous patriots. Right was all on one side, wrong all on the other.

Marking an Epoch. — However defective the books and however biased the teaching, the introduction of history into our elementary schools marked an epoch. It was a definite admission by the taxpayer and voter, the financial supporter of public schools, that these

schools could properly provide instruction in subjects on other grounds than their economic value or their disciplinary effect. It was the first distinct admission by the public school authorities of the duty or even the right of these schools to take cognizance of the demands of the higher natures of children. Compared with this great step, inferior method and doubtful results are of little consequence. Indeed most of the broadening and enriching subjects have come into the curriculum limping, to be cured afterward.

Better Books and Methods. — Both textbooks on history and methods of teaching it have greatly improved. Some of the more recent textbooks have the genuine merits of accuracy and of a readable, interesting style. The methods used depend, of course, upon the skill and wisdom of the teacher. Most of the textbooks offer little help in this regard. In addition to the textbooks there are several history books for children, some of which are used to supplement the textbooks, that are worthy of commendation.

Limits of the Course. — At the present time, in most elementary schools, the history of the United States is taught from a two-book series, frequently supplemented by "stories" of men and events. It is the exception to find any other history in these schools. In the high schools "general history" is taught in chunks from a compendium; in the better schools it is expanded and supplemented by reading. History of the United States is here too often either hastily reviewed or entirely ignored. In the college, history is largely a matter of specialization. So that it is quite possible for a graduate from a first-class college to have received no instruction

in the history of his own country except the very small amount of predigested information given in the grammar school. This is no mere guess. Any community and any school system can produce college graduates who have the vaguest notions, if they have any at all, of the differences between Hamilton and Jefferson, or just why the war with Mexico was fought. This truly is an unhappy state.

Reasonable Demands. — Is it unreasonable to ask that children who have completed a grammar school course should be very familiar with the leading facts of our national development, territorial, industrial, political, and social, with, as a background, a little knowledge of the other great nations of the past and present, especially of the world-renowned names that are significant of the evolution of civilization; that high school graduates should have a fairly definite knowledge of the great men and great nations of history and a pretty thorough acquaintance with the manifest noteworthy events of American history, and also some knowledge of the metaphysical, commercial, social, or ethical motives that caused them; that college graduates should have a quite clear view of the philosophy of history with a thorough knowledge of at least one epoch or phase or nation besides our own, and also a definite and philosophical familiarity with the doctrines and the passions that have made American history?

Why Results are Poor. — If this is not an extreme demand, it is one of which the present state offers little even of promise. For the average student who passes through our school system from kindergarten to college, not one of these conditions is met. Why? In the elementary schools, because of a method, imposed by au-

thorities and textbooks, compounded of ignorance and tradition. In the secondary schools, because of a shilly-shally vibration between devotion to a compendious textbook on the one hand and an aping of university specialization on the other. In the colleges, because of extreme specialization under an elective system and of sheer poor teaching, — the great defect of all our colleges, — in this instance, a taking for granted knowledge that does not exist and a foolish rushing into "original investigation," before laying a foundation in knowledge of the broad facts of history and of the great world movements.

What to Do. — What can be done about it? As this book is concerned chiefly with the elementary schools, I shall not attempt now to discuss the teaching of history in higher schools, except in the briefest suggestions.

What should the elementary school attempt in history, and how?

Need of General History. — Unquestionably the history of our own country should be paramount here. But this does not mean that the history of other nations should be ignored. A knowledge of some phases of world history is necessary to a comprehension of our own national life. Even children need a background for their pictures. There is no knowledge without comparison. If a basis for comparison is not supplied in facts, the children will of necessity create one from the imagination. We need patriotism, yet a patriotism not narrow and ignorant, but broad and intelligent. This is stimulated by a knowledge of our country's struggles, of its heroes and of its triumphs, not viewed alone, however, but rather in comparison with the heroes, the strug-

gles, the triumphs, and defeats of other peoples. The older pupils, as they begin to grasp the philosophical causes that lie back of all our history, need more and more this comparison with the history of other times and nations. Hence in all grades there should be presented judicious selections of universal history as well as the history of our own nation, particularly of those phases and events of universal history that were both the prelude and the cause of our own national origin and development.

Aims of Teaching History. — What are the aims of instruction in history?

First, the development of intelligent patriotism.

Second, to furnish a basis for ethical judgment obtained from a study of the efforts of men to realize their ideals, the obstacles they have met, and the success or failure attending these efforts, with reasons for such success or failure.

Third, the broadening of the mind and the widening of the horizon that necessarily follow a knowledge of human activities on a large field and under many varying conditions.

Fourth, a sense of the uniformity of human motives, of the solidarity of the race, of the dependence of the present upon the past, — the evolution of civilization through the action of universal, constant forces, — and a belief in the brotherhood of man.

Naturally the possible appreciation of these motives will vary with the age and intellectual capacities of the children. But even the higher aims should be in the minds of teachers of all grades, and some impressions regarding them can be made upon even the quite young

and immature. Of necessity the paramount aim for the younger children will be patriotism, as broadly intelligent as their mental states allow. This requires, as has been said, some knowledge of those great names and important events of world history that serve as a background for our own history.

To secure the ends outlined, what material should be used and how should it be treated, first with the quite young children, second with those older?

As preliminary to this discussion it is necessary to consider two debatable questions.

Place of Chronology. — The first concerns the chronological order of events. Is it best to follow this order in teaching history to young children?

The importance of the chronological order is, of course, the relation of cause to effect. It is impossible to have a comprehensive or philosophical view of an epoch or even an event without a knowledge of what has gone before. For instance, the French Revolution as a tale of ungoverned passions and mob violence may be sufficient to itself, but its real significance is lost unless it is prefaced by a view of the previous history, not only of France, but of Europe. The wider the knowledge of what went before, the more significant is the story of this era of blood and fury, and knowledge of both the revolution and its causes is necessary to a comprehension of the Napoleonic era.

Our own Revolution is almost meaningless without acquaintance, not only with the earlier colonial history, but with European conditions as well.

This consideration determines the importance of the chronological order in teaching history in high school and

college, in the latter especially as a necessary condition to specialization. But we cannot hope to give young children a philosophical or comprehensive view of even those occurrences that they may study with interest and profit. At first we can give them only simple and individual impressions. The only causes that they can comprehend are present and manifest causes. Chronology means little to a child. To him "Once upon a time" is as definite as "In the eighteenth century," and "Long, long ago" as "Fifty years ago." He has no comprehension of long periods of time. The child in the primary grades can understand that once his grandfather's grandfather, and other people who lived in this country at that time, thought they were not fairly treated and were not willing to be ruled by people across the ocean, who made them pay taxes without giving them an opportunity to say anything about it, and so they made Washington their general, fought these rulers, drove them out and elected their own rulers. He can understand that Lafayette and other Frenchmen came over and helped them. But he cannot understand the deep significance of this rebellion or the political condition of Europe which made success possible.

For the very young children, history should be reduced to stories of heroes without much regard for the order of events.

The Psychological Order. — Moreover, there is a psychological relation of conditions and events, often quite remote from their chronological order. There is doubtless a certain amount of truth in the "development epoch" theory, which is, briefly, that each child during his mental growth passes through the various stages that

the race has passed through in the process of its evolution; that, for example, he becomes in turn a savage, a nomad, and the rest. At least there is proof enough in this theory to justify the presentation at the same time of phases of history that are similar to one another and correspond somewhat to the present state of the child, without regard to their chronological order.

"The childhood of the race" is not merely a distant state to be studied in monuments and ancient heroic poems; it is an ever present fact. As far back as history goes there were living, side by side, nations in a state of advanced civilization sloping toward decay, and savages, as well as people just emerging into a semi-civilization. The racial childhood portrayed in Homer existed at the same time with the old and mature civilization of Egypt and nations farther east. When Rome was declining toward her fall, the Germanic peoples were just beginning to look forward to their *toga virilis*.

And it is so to-day. We have all stages, from ancient and decadent Persia, through the declining Latin races, the vigorous adult Saxon peoples, the young, undeveloped, but advancing Russian nation, the childish Filipino, to the African savage, yet in swaddling clothes.

Hence stories of peoples in a state of racial childhood may be obtained from any age, and for the purposes for which such stories are profitable, the era makes little difference. A group of stories of primitive heroes taken from many nations in as many ages is quite as good for ethical ends as one taken from a single age. And one order of arrangement is practically as good as another.

The best way to inculcate patriotism is not always to tell of our own heroes alone, and of their successful ex-

ploits against their foes, but to give stories of brave men who did brave deeds in war or peace, who made sacrifices, who lived good lives for their country, whatever that country was. Buddha, Aristides, Horatius, Gustavus, Tell, Winkelried, Garibaldi, Toussaint, Gladstone, *plus* Washington, Lincoln, and our other national heroes, make a better list for this purpose than our heroes alone, and in such a list for such a purpose chronology cuts no figure.

Chronology subordinated in Primary Schools. — In the primary schools the orderly teaching of history may easily be overdone, and the very end we seek be lost by an attempt to force chronology upon the children before they are ready for it. In the primary schools, then, where history is taught almost wholly for its ethical value, chronology should receive the slightest attention, and that should be confined wholly to the history of the United States. In the general history stories used in the grades no regard should be paid to the time order.

Relations that Primary Children can Grasp. — Children, such as are found in the average primary school, can have slight conception of the relations of effects to remote causes. The effects must be immediate and glaring for them. Moreover, psychological relations are much more easily grasped than geographical or political relations.

Injustice calls for immediate resistance, or poetic justice. Sudden danger calls for bravery. Moral emergencies demand moral courage. Suffering is cause for pity and help. "Freedom to worship God" is reason enough for the coming of the Pilgrims. The long, complex struggle of creeds and the contests of clerical and

civil powers which were the remote causes of the pilgrimage are meaningless to children. The noble triumph of Joseph teaches its own lesson and satisfies the instinct for poetic justice, whereas the ceaseless struggle of a commercial race against both the agricultural and the military, which the history of the Jews in Egypt really typifies, is for adults only. General Putnam riding down the perilous steps is picturesque and inspiring to children, and requires neither time relations nor philosophy to give it force. So the immortal story of Sir Philip is worth more to primary children than the list of England's sovereigns "in order duly set."

All of these historical tales rest for their interest upon a psychological motive. The relation of effect to cause is direct, immediate, and manifest. Hence, they are good stories to serve as an introduction to history. Groups of such stories, selected and arranged with regard to the natural development of children's interests, with an ethical rather than a political or an informing purpose, and giving especial attention to the history of our own national life, constitute the best material for history teaching in the primary grades.

In the Grammar Grades. — In the grammar grades, naturally, increasing attention should be paid to the sequential order. The history of the United States may here be presented chronologically. But even in these grades, care must be taken not to overwork chronology. The earlier ethical motive has not been outlived. Nor have the children suddenly become able to appreciate the historical succession of events as explained by social philosophy.

In general history the psychological order still is better

than the time order. An orderly knowledge of world history is as yet beyond the children.

In the higher grammar grades, then, while the study of the history of our country may be pursued strictly in the order of events, general history should still be taught chiefly in selected incidents or series of incidents. Biography may give way to a considerable degree to the stories of great epochs, treated in an orderly manner so as to emphasize increasingly the relations of these events to consequences less immediate than those formerly considered. Geographical motives, such, for example, as the effect of mountain barriers between nations, and certain political motives, such as desire of conquest, may be introduced. The history of England and of certain other European nations as related to the settlement of America should be given with some fullness. Especially should the history of England as it bears upon the struggle for independence receive quite full and orderly treatment. Without such a background it is impossible to understand the birth and childhood of the American nation.

In the High Schools. — In the high school the chronological order should rule, to make plain the dependence of the development of each age upon the preceding, and to give that enlargement of vision which constitutes one of the chief values of the study of history.

In the Colleges. — In the college the study should be, of course, chronological, but it should be more. It should be philosophical and should give the student an insight into the deeper human motives of action, out of which grow ideals, moral judgment, and an appreciation of the relations of both to individual conduct and to the progress of humanity.

CHAPTER XIV

History (*Continued*)

The second of the preliminary questions to be discussed is the place of biography in the teaching of history. Should history be taught to children as a series of great events, the evolution of an ever changing society, or as centering about the lives of significant men? Shall we follow Freeman or Carlyle in our teaching?

Nature of History. — Naturally this inquiry raises the larger question of what history is. Is it a narrative of evolution due to countless unconscious forces, geographical, psychological, social, or is it the record of master minds controlling their fellows and consciously leading to determined ends? This is too great a question for discussion here, except as it touches the teaching of history to the young. Indeed, it can be answered only by a compromise statement. History is doubtless the result of both conscious and unconscious forces. Geographical conditions, the forces of earth, air, and sky, affecting man's physical wants and their gratification; psychological conditions — the aspirations of men and the consequent struggles to satisfy them; social conditions — the relations of men with men, governed by love or hate, need or greed, the never ceasing battle between those who would enslave and those who would be free, — these are great forces, and without doubt they largely determine the activities of individuals, and hence of nations and of races.

On the other hand, great and significant movements must have leaders. And not only so, these movements sometimes are personified in the leaders, without whom they never would have occurred, because the masses would not even have known their needs or have had the desire to change.

It is impossible to conceive the Jewish exodus and long wandering without Moses. In an unusual sense Garibaldi was Free Italy, and Mohammed was the fanatical, bloody, conquering Moslem host.

In the college, the teaching of history should treat fully both these sources of historic movements, and also should train the student to discriminate causes. The philosophic view, which is the proper college view of the subject, includes of necessity both conscious or personal forces and those greater unconscious motives which may be called cosmic; and this view is necessary to the mature student.

History for the Child. — How is it with the child? What is the relation of these broad views of the subject to the ends of teaching history to him, as enumerated in the preceding chapter: ethical training, — especially in patriotism, — moral judgment, and culture?

Moral Judgment Personal. — To the immature mind all moral states and judgments are strictly personal. Indeed, this is true of most older people. Few of us can conceive abstract moral conditions as applied to national life or even corporate life. When we do try to picture the moral characteristics of the action of a mass, we unify the mass and make a single magnified individual. With children this is especially true.

The Culture Element. — The element that we call culture is not confined to mature minds, of course, but in immature minds necessarily it is immature, — the "ever flowing." It is an intangible, almost volatile, product of experiences that to the individual are rich. If the individual be a child, the experiences must be childish, and the resulting culture childish. Any system of education that tends to secure mature views and the expression of mature judgments from children is distorting, shallow, and harmful. It makes prigs, and fattens that conceit that is necessarily a bar to growth.

Danger of Generalizations. — The most common form of this particular evil in our schools is thrusting into the mouths of children those sweeping generalizations that of necessity they must take entire or not at all. This is most manifest in the ordinary way of teaching morals, giving children those half truths that are commonly stated in proverbs, and expecting them to base moral judgments upon them. Moral precepts given in the ordinary allopathic doses are responsible for much real immorality.

The bearing of all this upon the subject in hand is this. Generalization is the last product of thought upon a series of phenomena. Along the route from the first observation to the generalization are thousands of pitfalls. Even trained minds often fall into one or more of these. Witness all the strange, discarded theories of science, from that of the earth resting on a turtle's back to that of the hot polar sea.

In history it is especially difficult to form clear conceptions of the motives and causes of great movements as such. The crusades and the world-wide emancipation movement were due to so many mixed motives that

generalization with the eyes shut is far easier than scientific analysis.

When such master minds as Hegel and Lecky go astray in attempts to synthesize movements involving the heartbeats, the appetites, the prejudices, the passions, of millions of individuals, and to treat of their combined activities as a single force, what can be expected of the ordinary mind, and especially of a child's mind?

In physics, the resultant of many forces may be accurately measured; not so in metaphysics. But this is what history, considering great national or racial movements, assumes to do. This is the philosophy of history, and hard as it is, it is proper effort for the human mind to study man, not merely in the individual, but in the mass composed of individuals. I pursue a certain course each day from mixed motives. My ninety million neighbors do likewise. The resultant of these ninety million and one courses of action constitutes the history of the United States at the present time. It shapes all policies, fixes all compromises, is responsible for all good and all evil that come into our national life, and from it into each individual life. But to determine what this resultant is and to state it clearly is not so easy. Few succeed in doing it. Only the historian long removed from its passions, with the perspective of distance, can hope to approximate a true conception of it. But this is history, and the mind trying to grasp it receives a training, a culture, that few studies can supply. The young child, however, who thinks as a child, understands as a child, cannot touch it. If we force it upon him, he gets mere words. For him, motive is individual, actions and results are individual, history is individual.

Carlyle rather than Freeman. — It follows that in order to secure the ends aimed at in teaching history to children, the doctrine of Carlyle, rather than that of Freeman, should rule in the main. The study of history by children should be largely the study of heroes, individuals who loom large, who appeal to the imagination, who may become ideals. In time Lincoln and Lee will come to personify all that was greatest and best in the contrasting ideals that fought to a finish in our Civil War; and to children it is much better that they should be so presented and studied, than that time should be consumed in learning the details of military campaigns, now of importance only to the professional soldier.

Other Centers of Study. — This general statement may be modified to a certain extent. Sometimes a single great and picturesque event, such as the battle of Bunker Hill or the signing of the Declaration of Independence, may make a better central study than the name of any individual. The important truth is that individual narrative, with all the definiteness, positiveness, and picturesque detail of a novel, is better history for children than either the chronicle or the philosophical generalization of the "sweep of events."

Subjects must be Vital. — In the primary schools it makes little difference in what ages the scenes of the narrative are laid, so long as they are "once upon a time." But the subjects must be vital, and must have a direct bearing upon one or more of the ends for which history is taught, and the story must be vivid and convincing.

In the grammar schools, along with a somewhat more orderly treatment of the subject, events as such may receive fuller consideration. Not only may causal time

sequences begin to appear in the course, but to a degree the hero may give place to the group, the "Black Knight, with his single lance," to the army following its leader. But the general method may not be changed. The time has not come for much generalization, nor for the synthesizing of individual acts into the acts of masses. The fields studied must still be small and easily scanned. The individual must still be paramount.

The Local Center. — There must always be a local center of interest of major significance, about which events and personalities of minor consequence naturally group themselves. Such centers may be the names of great leaders, as Richard of the Lion Heart, the names of places, as Runnymede, or single important events like the Dred Scott decision, or even wider movements, provided they are definite and picturesque, like the "Children's Crusade." But they must be real centers, significant and suggestive, and they must be so selected that they will surely find apperceiving centers in the children's minds to welcome them, and then will create new centers. In the choice of such events the rules as to chronology laid down in the preceding chapter should be heeded. Remember that in the grammar school the chronological order of American history may be followed with some closeness, but in general history it is still of slight consequence. In these grades the advance in logical thinking and in the comprehension of causal relations should receive recognition rather in the selection of central subjects and in the grouping of related events and persons about these, than in the chronological order.

Take, for example, the characters and the events that center about the name of Queen Elizabeth. Many events

of sufficient significance in themselves to serve as topics for volumes of history find in the unique personality of the "Virgin Queen" a center at once unifying and picturesque. For the young student just opening his eyes to the relations of history, better than the chronological order, better than the logical sequence of events, is this single striking individual. Bacon and the birth of modern science, Raleigh and the early settlements of the New World, Shakespeare and the literary flood, Queen Mary and the Spanish Armada, with all the confused struggles of churches and states, — a morass in which the youth is so easily lost, — all these seem to solve themselves in the person of the queen. At least the young student who is taught to group them all about her gets a clear picture of events and their relations that is quite sufficient for his needs, and vastly more satisfactory than any other possible view.

In all grades, at least below the college, the choice of centers of historical interest is of the utmost importance, greatly transcending that of chronological sequence. Grouping occurrences about a logical center avoids both the scrappiness of disconnected stories and the tedium of chronology. It secures perspective and balance, which both the other methods lack.

Need of Discrimination. — A most important corollary to the above advocacy of the use of centers of interest in teaching history is the need of discrimination in regard to what to teach. Perhaps the chief objection to the chronological sequence is the deadly monotony due to the lack of discriminating emphasis. This is especially noticeable in those compendiums of historical facts that commonly serve as "school histories."

Nothing stands out. All events are reduced to the dead level of the chronicle. The date is " the thing," and each date must receive its appropriate tag, all of equal size and of the same color. This is historical impartiality with a vengeance. If any one thinks this stricture exaggerated, let him select any six school histories and try to read them. If this does not result in a loss of historical perspective, it will be because the soporific qualities of the books save him.

The Good Story. — Few historians, even the great ones, can tell a good story, and those who do succeed in this are likely to be accused by their rivals of being " literary rather than scientific," — Macaulay, for example. Be this as it may, I have no doubt that the historian who can tell a good story, still keeping within the metaphysical bounds of truth, is the one who will find the readers and will exert the widest and most beneficial influence. Herodotus and Xenophon were good story tellers. So were Livy and Cæsar and Tacitus. So in later times have been Froude, Macaulay, Prescott, Parkman, and John Fiske, not to mention other conspicuous examples.

At any rate, and especially for children, history must be story, and the writers of history for schools should tell stories, instead of being, as they are in the main, the dullest of chroniclers. Scott's "Tales of a Grandfather," not to mention his novels, the much-derided Dickens' " Child's History of England," Hawthorne's " Grandfather's Chair," and — yes, don't gasp — J. S. C. Abbott's once widely read histories have done more to arouse interest in the study of history and to stimulate ideals among the young than all the " school histories "

ever written. Call them by your pet opprobrious epithet if you will; they have been undisguised blessings, and I doubt not that an honest confession would disclose the fact that most of the readers of this article who are really interested in history got their earliest enthusiasm from one or more of these books.

Importance of Selection. — These books, and others that have the secret of story telling, discriminate between the important and the unimportant. With unerring judgment they choose the single significant and picturesque persons, events, times, places, or objects, and arrange dramatic plots about them; and this is what the teacher must do who would make his work vital and lasting.

Don't try to teach everything. Have the courage of your convictions and spend your time in developing a few central ideas with considerable fullness, so as to give the historical sense and raise the subject out of the plane of mere memory.

Choose the Inspiring. — Not only must discrimination be practiced regarding the political importance and picturesqueness of events, but choice, in so far as possible, should favor those occurrences that are likely to prove helpful toward the higher moral ends of teaching history. Civilization, properly presented, is more inspiring than barbarism, peaceful achievements than war, freedom than tyranny.

Greatness of Peace. — Especially should strong efforts be made to arouse interest in the arts of peace rather than those of war. This will not always be easy. History, as written, is too much a record of wars and too little of the achievements of peace. From

one point of view this is not unnatural. War is picturesque, and appeals to the admiration for the heroic always present in the minds of the young. These elements are often lacking in the records of peace. Hence it is more difficult to write a history that shall record the progress of civilization in times of peace and at the same time supply the elements of interest, picturesqueness, and heroic conduct essential to a history for the young. Such a history requires greater skill in both the writer and the teacher. But this fact should not deprive the children in the schools of the advantages to be gained from acquaintance with the higher ideals.

War may not be Ignored. — It is not to be inferred from this, however, that war is to be either ignored or slightly treated in school histories. That would be an error perhaps even more serious than the prevailing one. War is unfortunately a great and conspicuous fact in history, whose influence on the world's progress has been beyond calculation. It has produced the highest heroism as well as the grossest brutality. It shows men at their best and at their worst. No history would be even approximately complete which failed to give due prominence to the great struggles for liberty or even to the wars of conquest, or which failed to make much of great military heroes. In a general way the great wars of the world's history show the great aims for which men were struggling; they show the climaxes of historic epochs.

My contention is for a better balancing of values. The great movements, conquests, and heroes of peace should receive their due share of attention. Not merely the military leaders, but the leaders of thought, of ideals, of

the arts, of commerce, of manufacture, of finance, should be accorded the distinction that their greatness deserves.

In this country we have had four great wars and several minor ones. They have developed heroes, and two of them especially have been fundamental to our development as a nation. But they have occupied in all but a few years of time. All the other years of our century and a quarter have been filled with the struggles and the conquests of peace. They, too, have developed heroes, and through them our greatness has been attained. So they should receive by far the larger share of space in our histories. That this is not the case, even the most casual examination of current school histories will show.

Need of Grouping. — What is needed is to bring out the greatness of these conquests of peace by a careful, logical, and picturesque grouping of their records about suitable centers of interest, either persons or events. The growth of a great city like New York or Chicago may well serve as such a center, for the great cities are ganglia of nerves that reach to every part of the land, and in their growth and its causes is bound up the growth of the country. Such inventions as the cotton gin, the telegraph, the steam engine, and other means of communication, may also well serve as centers for great groups of attendant and dependent facts.

It should be always kept in mind that peaceful growth is the ultimate hope of history, that all men, even soldiers, look forward to the time when "nation shall not lift up sword against nation, neither shall they learn war any more."

The movement toward permanent peace among the

nations, though still in its beginning, is yet the most significant fact of the present era. The " federation of the world " should be kept before all minds as the highest ideal of history. To this noble end the schools can contribute by making the events and the heroes of peace appear to the children in their true light, as even greater than those of war.

Summary. — 1. History in our schools should be mainly biography.

2. It should include both American and " general " history.

3. In the primary schools, chronology should be disregarded. In the grammar schools the American history taught should follow chronology moderately. General history should give little attention to it. In the higher schools chronological relations assume increasing importance.

4. History, whether chronological or not, should be taught about carefully chosen, picturesque centers of interest — persons, places, significant events or objects.

5. Discrimination should be exercised in choosing what to teach. The dead level of the chronicle should be avoided.

6. The highest ideals should be kept to the fore. Peace should appear as greater than war.

CHAPTER XV

Geography

Geography a Conglomerate.— Geography, "as she is taught," is a strange composite of subjects, including, besides the sciences, a little history, a little philosophy, politics, sociology, anthropology, religion, and literature, which with more or less reason from time to time have been grouped about the name. As a "Description of the Earth," it is made to include all that is in it, on it, or about it. The earth may be studied as a member of the solar system; as a geological product; as a sphere having an irregular surface, partly land, partly water, in various forms and presenting various appearances; as the abode and support of life, both vegetable and animal, varying according to the above-mentioned conditions; as the home of man, supplying him with his support and partly, at least, determining his character and his pursuits; and as the scene of human history and the present ground of human effort, divided among the nations of the world, according to race, intelligence, power, and other conditions. Each one of these subjects is a vast one. Yet they all have been first amplified and then squeezed into the compass of a school textbook for the consumption of children.

In its present state geography is an almost hopeless subject. The doctors disagree. No two authors of textbooks take the same view as to what should be taught.

Naturally enough the teachers are at sea, and the result in school is too often altogether barren.

Selection Needed. — What is most needed is a wise and workable plan of selection and coördination. But unfortunately most of the experts who have thus far written for us either textbooks or discussions on the teaching of the subject have been too eager to give their views as to the incomparable importance of their pet fields of knowledge to present us with a sane and judicial treatment.

It is necessary to determine first the ability of children, at varying stages of growth, to learn geography in order to ascertain what and how much might be taught profitably, given unlimited time. It is necessary, in the second place, to take up the question of time and determine how much and what of this possible maximum may properly be attempted within the time limits of a school course of study.

It is from this point of view almost of greater manifest importance to determine what should not be attempted than to tell what should be taught. The importance of the undertaking can hardly be overstated, because I am inclined to think that over geography and its allied subjects more time is wasted in school than over any other subject, not excepting arithmetic.

I can merely speak as a layman, and I very modestly offer the following suggestions:

Fundamental Defects. — The fundamental defects of most teaching of geography are first the attempt to give a knowledge of facts physically and psychologically remote from the children, before the necessary geographic concepts have been created, and, second, the continual

presentation of verbal statements beyond the apperceptive range of the children learning them, which consequently are to them merely idle words.

Geographic Concepts of a Child.—Let us consider the possible geographic concepts of a child of ten or eleven years, the age at which most children take a textbook in geography. If he has not been taught in school, he knows direction; something of distance; the location of the buildings and other notable objects of his neighborhood; such physical features as he has seen, probably hills and valleys, possibly lakes, rivers, brooks, and an ocean, — varying with the locality. He knows something of the vegetation growing immediately about him, and will have a few surmises as to other kinds which he finds at the grocery. In like manner he knows a limited number of animals. He also knows weather. He is familiar with industries in a general way, with one or two quite intimately. He knows a few types of people, generally so modified as to have more resemblances than differences. If he lives in one of the very large cities, his knowledge of types of people and of industries will be much greater, and of plants, animals, and physical phenomena correspondingly less. If he lives in the country, the reverse will be true. If he lives in a village or a small city, his apperceiving centers will vary toward one extreme or the other. But this knowledge is all purely local, and when extended by the imagination into remoter fields goes out unmodified. That is, the children imagine the farmers and the merchants and the manufacturers of foreign countries, of whom they learn in their geography books, as like the farmers and merchants and manufacturers that they see

about them, and they cannot conceive them to be different excepting as the result of new experiences or of good teaching. Such differences as they do imagine belong in the same class as fairy stories. The geography of Sindbad the Sailor's voyages is much more real to many children than that of Europe, the difference being solely in vividness of impression and not at all in accuracy.

Depends on Imagination. — This suggests the fundamental difficulty in teaching geography. It depends so completely on the imagination. The children must project themselves into a purely imaginary world. In no other subject is this so completely true, not even in history. It is necessary to establish a point of contact between the real and the imaginary so that the former may be carried over into the latter, making the pictures of the unknown true. If the steps are too long, the children's feet are lifted off the ground entirely.

What is here described may be called the natural state of the average child as to geographical concepts. They are really all individual. He generalizes, of course, but his generalizations are merely the extensions of his limited experiences to unlimited and absurd lengths. The city child imagines all milk coming in bottles. A little boy said, "Mamma, who puts the bottle of milk at our door every night while we are asleep?" "What a foolish question," said the foolish mother; "Why do you ask that?" "Well," answered the child, "I s'pose God does, but I wanted to be sure." A child in the mountains for the first time, where the milk came from the local dairy, said to her mother, "I don't like cow's milk; I like Borden's better." To one imagi-

native child Olympus is as remote as heaven and as unreal. To a second as described in "Snowbound," it is the local Huckleberry Hill magnified and peopled with strange beings. To a third, whose imagination has not been stirred, it is merely a word. Manifestly, the second state is the only one that leads to geography.

As to astronomical geography, the child's concepts are even more vague. He has almost nothing to go on. He sees the heavenly bodies, it is true, but he cannot imagine the earth one of them. Such grotesque pictures as appear from time to time in the comic journals are more likely to convey to him some clear ideas of the earth as a heavenly body than do all the geography books. However, in childhood it is of little consequence whether the earth is a globe or a platter, so long as the sun and the moon and the stars rise in the east and set in the west, and season succeeds season, though of course it is well to tell children that the earth is round and let them grow into the knowledge.

To recapitulate, the average child beginning to use a primary geography, if previously untaught, has a meager knowledge of the people he has seen, their characteristics and employments. He also knows the topography of his home town more or less completely and of such places as he may have visited. That is his equipment for the study of geography, except an unlimited imagination which tends to make a supernatural product of everything partially known, of everything described in words outside his experience. This statement covers fairly well the range of knowledge, hence of apperceiving centers, of the average child not specially taught.

Acquired Concepts. — But children in the average modern school when taking a textbook in geography are not in "the natural state." They have been given a great number of elementary geographic concepts in school, through oral instruction and through supplementary readers. It is important to consider this possible enlargement of the apperceiving possibilities. What does it commonly give? What should it give? How does it affect the first use of the textbook?

We must assume that instruction in any subject, at any time, is for the training of the minds and the enrichment of the lives of the children *at the time*, and not merely to prepare them for the use of a textbook later.

The Imagination. — The first three years of school, before a textbook is used in geography, cover the period of the most vivid imagination of the whole school life. They are the days when fairy tales and nature myths appeal most strongly, when the mind can see in the unknown *likeness* to the known, but when *differences* readily run into grotesque images. Little boys and little girls and their fathers and mothers and brothers and sisters and pet animals are the same the world over, but unfamiliar creatures, unknown powers, readily become hideous monsters or kindly, absurd beasts.

It is the childhood of the race over again. Gods and goddesses, fairies, nymphs, ogres, dragons, dwarfs, giants, valkyrs, angels, represent flights of the imagination attempting to compass that which has no prototype or parallel in experience.

So the early geographies made the unknown parts of the world totally unlike the known parts. The imagination, unchecked by knowledge, ran riot in two-headed

giants, one-footed men, serpents coiled about the earth, turtles and fish as its supports, the heavens above, the earth beneath, and the waters under the earth. Scylla and Charybdis, Niflheim and Valhalla, Olympus and Hades, were mere attempts at geography, unguided by a sane apperception. The voyages of Ulysses, the travels of Sir John Mandeville, the wanderings of Sindbad, all belong to the same class; and children, given geographic terms beyond their apperceptive powers, but appealing to their imaginations, are likely to make just such journeyings. Truly, however, this is better than the deadly instruction whose words are drugs stupefying even the imagination.

Important Concepts. — What concepts of the world should teachers seek to implant during the first three years of school? Naturally, such as grow out of the most vivid knowledge that the children have. That is, people, — the family, the playmates, the neighbors; the home environment, — food, bed, fireside, play, work; animals and plants, — all the concerns of child life.

Which of these can be extended most readily into the world beyond the immediate ken? That may vary with the circumstances. But I should say, first, child life in its most material aspects, — food, clothing, games, parental care, cold, heat, school, also the employments of others within the daily observation. How can this be done? I must repeat, all geographic knowledge except that obtained by direct observation comes through the imagination. Hence, facts taught to children, to be of value, must be *extensive*, that is, they must prepare the minds for the production of correct images of the remote and unseen when described in words. It is the

failure to consider this that has often reduced to absurdity so-called "home geography," making it merely a statement of the obvious. The bare fact, like a smooth round pebble, has little educational worth. A fact must be covered with hooks to give it value.

Hence, the geographic ideas to be given during these primary school years are to be estimated by their possible relations, the strength and tenacity of their tentacles, rather than by their manifest substance. They must produce the sort of intelligence that prepares the way for further intelligence. This is rather vague, I admit. It does not tell what to teach. And, indeed, it is impossible to dogmatize about that.

Influence of Environment. — So much depends upon what the children of any school are likely to have seen and heard before coming to school. The first lessons for a class in Louisiana should be different in many respects from those for a class in Maine, because the "known" differs. To a child in southern California grass is an exotic raised on lawns with great difficulty. To a child in Minnesota bananas and oranges occur only on fruit stands and at the grocer's.

The first steps from the known cannot be very long, especially because of the psychological fact above noted, that children readily see likenesses but can make little educational use of differences. Almost the only differences to be noted with profit at first are those of degree, the adding to the known, or substracting from it some other known. A child never having seen a cow cannot imagine one except as like a dog, or a mouse, or some other known animal. (See "Contents of a Child's Mind," Stanley Hall.) But the same child has no difficulty whatever

with a two-headed giant or an animal with the power of speech, or a bodiless head. Children in a temperate zone can understand Agoonack, because they can imagine a very long winter; but to children in southern Florida, or in Cuba, Agoonack's home belongs with the land at the top of Jack's beanstalk. To Anna Josefsky, of Baxter Street, New York, a rolling prairie is a wheel on a cart or perhaps a barrel rolling along the sidewalk, or possibly a roller skate. And there is no way of correcting these images at the time. All attempts to give knowledge of conditions widely different from those familiar should be abandoned with young children. Contrasts may be used, but only contrasts both of whose elements are known. Differences in climate as to heat and cold may be explained because children know both. Contrasts used must be of degree or quality of known elements.

The first steps should be to likenesses with slightly differing aspects, and these should be made easy by graphic and constructive illustrations. For instance, the dress and food of children in other lands can easily be made clear by illustration. Games, if known, are good beginnings. Homes and the modes of sleeping and eating are not difficult to teach and are very suggestive. When the children can read quite readily, such books as "Seven Little Sisters" are very helpful. As Dr. Taylor clearly shows in his valuable articles in "Educational Foundations," stories with geographic settings are among the best means of imparting concepts.

The Study of Physical Features. — The question of studying physical features is sure to arise. The answer must depend very largely upon the locality. Little can

be done profitably in very large cities during these first years, but in smaller places, and especially in rural districts, a beginning may be made. This, of course, must be a mere extension of "nature study," just a touch of "cause and effect" applied to observations. "Brooks and Brook-basins" is suggestive of a good model. If children are familiar with hills but not with mountains, they can be told that a mountain is a big hill with no harm — and little good effect.

I was born among hills with no mountains near. During all my childhood a mountain was a mysterious object, conical and with a sharp-pointed peak, like the pictures in the book. I had an idea that it was big, but that meant little. This is to be said, however. My curiosity to see a mountain was in inverse ratio to my conception of one, and that was doubtless valuable. But it does not take much formal teaching to rouse in children curiosity about mountains or oceans or foreign lands that can be satisfied only in later years and by travel.

Make it Picturesque. — As to method, I suggest only that all possible means be used to make the instruction picturesque and vivid. Sand table construction, stories, and pictures are the chief reliance in the primary grades. Construction is the most effective means of straightening out twisted imaginations. Word pictures developed into sand pictures or construction pictures are excellent. Children at this age especially need the reaction of expressive activities.

Use of Pictures. — A caution is perhaps needed as to the use of pictures. It is by no means certain that looking at a picture will produce an accurate impression of the object portrayed. I have seen in geography books

and in other books, too, on the same page, pictures of unfamiliar objects of varying sizes, in different scales, so that a bird was as large as an elephant and a zebra as large as a Hindoo temple. The effect is inevitable. Children, ignorant of them all, will conceive them like the pictures. The bird, in their minds, is as large as the elephant, and the zebra as the temple. Pictures of whole scenes with several objects in proper relations are better for children than pictures of single objects, because relative values are then given. I am aware that some art teachers may differ with me, but I am not talking art. I am talking psychology and geography.

A picture of Agoonack suitably dressed is satisfactory, because the children, knowing her to be a child, fix the environment and the size accordingly. But a picture of a strange animal appeals to no such apperceiving mass. So, generally, large pictures, sufficiently composite to give relative values, are the best for teaching geography to young children. The tiny pictures tucked in the corners of pages or grouped artistically in geographies or supplementary readers are frequently worse than useless. They lie to the children.

Another chapter of knowledge that may be opened to the children is the industrial, — what people about them do to provide food and clothing and homes for their families. This is valuable in itself and furnishes very excellent hooks to hang other things on. As is evident from Miss Young's studies, quoted by Dr. Taylor, in the articles above named, interest in industries is an acquired taste, but it is none the less desirable. Indeed, one of the aims of early oral instruction is to develop geographic concepts that would otherwise not be de-

veloped at all. Soap is an acquired taste, as is civilization itself.

Caution. — But here, too, caution is necessary. Avoid giving instruction in the obvious. In a rural community, where nearly every one makes a living by farming, little attention should be paid to that industry at this stage, except to lead to others. If dairy farming is the chief industry, follow the milk until it goes beyond the knowledge of the children, adding a step, to the condensing factory, the sterilizing plant, the cheese or butter factory, or to the city in bottles, — some point of new knowledge. But especially study the industries of the few, those which most children will not know without instruction, but which may, however, be studied by observation; as the blacksmith, the merchant. If a cow has been sold to the butcher, what must happen before the skin is brought back as shoes?

In the city, more industries may be observed and some objects in common use may be traced to sources. But it must all be very simple and very clear. The knowledge must be fresh and of immediate interest. Moreover, these very characteristics make it better as an apperceiving center.

The work of the first three years in geography should be largely incidental, should seek to enlarge the apperceiving powers, and should give a few clear concepts that will enable the imaginations of children to grasp the new and larger facts concerning the world, which may properly be presented in the higher grades.

All this knowledge should be vital and of interest and worth at the time, for only such vital knowledge can be the basis of apperception.

CHAPTER XVI

Geography for Primary Grades

Assuming that the children have received the training outlined in the preceding chapter, that they possess a few elementary general geographic concepts, that they have acquired the ability to extend through the imagination their acquaintance of their immediate environment enough to comprehend like conditions at a distance, what should the primary geography do for them, and how?

The World not the Earth. — Primary geography, to meet the apperceptive possibilities of even the brightest children, should deal with the world more than with the earth. The earth is a "heavenly body," a member of the solar system. The world is this globe we live on, with all its oceans, mountains, and plains, all its plants, all its creatures, all its people with their races, relations, commerce, likenesses, and differences, and their governments and political divisions.

Should give Few Facts. — It should not seek to teach a large number of facts, especially the facts of political geography, such as names of cities, boundaries, items of production and commerce in lists, such as "Indiana produces corn, wheat, and hogs."

It should have no one or two or three-line sentences giving isolated facts, as: "Lynn has many shoe factories," "Birmingham has extensive iron foundries."

The great defect of most elementary geographies is

excess of zeal in giving all the facts the author knows. These facts, not apperceived, not related to any interest in the child's mind, merely clog his memory, or pass swiftly into the useful waste basket of forgetfulness. There are very few primary geography books that do not err in this regard, though some are greater sinners than others, of course.

Should extend Knowledge. — The primary geography should extend the childish knowledge, acquired before taking the book, through the imagination. It should give more and more definite geographic concepts. It should make the remote parts of the world seem real and should explain to the children a limited number of phenomena and conditions as rapidly as they can grasp them.

Detailed Study of Types. — This should be accomplished mainly through the somewhat detailed study of a few typical instances, which may lead to a comprehension of a few general truths of wide application. What children need is possession, not of many facts, but of pregnant facts. All school instruction should aim first to develop, and then to fix, general truths applicable to many instances. Against this fundamental law of education, no subject is a greater transgressor than geography. The subject is so comprehensive, there are so many facts of so many kinds in its field, that writers of textbooks on the subject have, with few exceptions, abandoned the effort and fallen back weakly upon the old plan of crowding all the facts possible within the pages of the books, trusting to Providence to save the children.

Develop Generalizations from Instances. — Not only should a primary geography give a few broad but defi-

nite generalizations of wide application, but it should develop these from instances, not merely state them. The larger the truth, the more important does it become to arrive at it in the right way, the way of real as distinguished from "verbal" knowledge. The truth *stated* may mean something or it may mean nothing to the hearer. The truth that grows upon the vision, slowly, from cause to effect, from what is already known to a new truth, becomes a part of the mind itself. This is real knowledge.

It is worth more to a primary class to know that there are many waterfalls along the Genesee River, that waterfalls may be used to drive machinery, and that hence one might expect to find manufactories in the Genesee Valley, and then to know that Rochester and other manufacturing places are found here, than to have a list of all the cities of central New York with a statement that each produces this or that article.

Elimination and Selection. — Evidently, then, before the teaching of geography becomes even reasonably satisfactory, two things are necessary, elimination and selection of material and the introduction of the laboratory method.

For the former courage is needed. Elementary geography must cease to attempt to give universal knowledge, and must confine itself to a few types, embodying generalizations. The greater part of the small items relating to political geography, which fill most of our primary textbooks, must be cut out entirely. Those that are to remain must be carefully selected as typical, so that children may have the wherewithal to assimilate new facts as they present themselves.

The full, detailed study of a single city or mountain range or river valley is worth more to a primary school child than the naming of all with an item or two about each.

By detailed study, I mean study as nearly at first hand as possible; at any rate, the study of essential characteristics, one by one, in such a way that they are comprehended. This means the use of the laboratory method in so far as it can be used.

The Laboratory Method. — By the laboratory method I mean the use of direct observation of typical forms and drawing conclusions from these observations.

If in the neighborhood of a river or a mountain, or in a large city, the immediate environment should be studied to master the type. The book is merely incidental.

When studying forms not to be found in the immediate environment, some typical instance easily comprehended through description and story should be selected and studied in much picturesque detail until a clear, pregnant image is secured. Suppose the subject is a river, and there is none near. Select the river in which the children are most likely to be interested, for instance, if in the Middle West, the Mississippi or the Ohio, if in New England, the Connecticut, or if on the western coast, the Columbia.

Spend time enough upon it to make it loom large in the imaginations of children. See that a vivid picture of the river, from source to mouth, is in the mind of every child, — its banks, the country it flows through, the towns along it, its traffic, if any, its influence upon the life in its vicinity — all the facts that an investigating traveler of the age of the children would acquire. A single such

study is worth more than the naming all the rivers on the continent.

Follow Natural Interests. — One more thing should be said. A primary geography should follow the natural interest of children, which proceeds from themselves outward. This is chiefly in marked resemblances and in marked contrasts, that they can understand. It is in people more than in things. It passes from people to the things that affect them. It weighs all values by effects upon people.

CHAPTER XVII

Geography for Grammar Grades

Establish Apperceiving Centers. — The principal aim of the teaching of geography in the grammar school is the same as in the primary school, namely, the establishment of apperceiving centers. In both, geography is mainly an informational subject of the most general character. The amount of actual knowledge that can be acquired by a child in school at the most is, however, so pitifully small that it is of the slightest value, unless it is strongly cohesive and carefully organized. It must be of such a sort that new knowledge resulting from reading and travel will readily find its place around the apperceiving centers established by the study of geography in school and will get its explanation from them. I have asked children in school, who were living near the foothills of the Appalachian range, while studying geography, if they had ever seen a mountain, and have received the answer, " No."

No one will question that the older geographies gave little heed to this need. They supplied for the most part condensed and desiccated statements of fact, both uninteresting to children and conveying little, if any, meaning to them. Of what use, for example, to a grammar school child is the statement, quoted from a geography, quite modern too, that " On the slopes of the Himalayas are the independent states Nepal and Bhutan

and the native principality of Kashmir." This is unexplained and unamplified except by a single sentence about Kashmir. It is taken from a page filled with just such isolated statements. If memorized is not such information given in such a way worse than useless? Is it not sure to result in merely verbal knowledge, attic refuse, which is not knowledge at all? Is it not likely to interrupt the natural process of learning, to impair the assimilative power of the child, and to make the subject itself disasteful? The example quoted is by no means an isolated or an extreme instance. It is a type of the statements that pervade all the older geographies and several of the newer ones.

Wherein are its defects? It ignores apperception. It takes for granted that comprehensive general knowledge of the world which it should be the function of a geography to give. Geographies like the one quoted lack detail and yet have too much detail. That which they have is of the wrong sort and in the wrong places. It consists in a vast number of isolated and, to a child, meaningless facts. The detail needed, as in the primary grades, is the amplification of single typical subjects, with abundant illustration and many associated and interesting facts, which may serve as a basis for inducing principles. Better ten pages devoted to the complete exposition of a single river valley than the same space filled with a hundred isolated statements about as many river valleys.

The former may serve to establish certain general truths regarding valleys and their relations to the industrial and social life in them, which will create justifiable expectations as to other valleys that may be studied,

that is, it will establish *principles* which may be applied in all future study of similar conditions. The latter produces nothing but verbal congestion. The trouble is that in our zeal to teach everything we teach nothing well.

For a child in New York studying the geography of Minnesota it is important to know of St. Paul and Minneapolis at the head of navigation of the Mississippi River, and to know enough about them to establish interest and some appreciation of their relations to his breakfast. The fact that " Mankato has flour mills, stone and cement industries, and iron foundries" (quoted from a recently published geography), had better be omitted. It obscures the main proposition and will speedily be forgotten, as it ought to be. For a child in Minnesota this should be given and amplified. The book above quoted gives seven lines to North Dakota, as a whole, and fifteen to six of its tiny cities. The whole twenty-two lines are worthless to a New England child. Two or three paragraphs giving the place of North Dakota in the industrial world, or describing its prairies, might be of value.

Principles must grow from Instances.—Here, again, as in the elementary grades, we come upon an error which may be said to dominate some of the newer textbooks. They give much space to the comprehensive statement of principles, for example, those of physiography, in general terms, instead of developing them out of observed or localized conditions. And, to make the matter worse, these unsupported generalizations are usually given in the earlier parts of the book, to be consumed by children just out of the primary school.

It is impossible to say which violates the more flagrantly universally accepted principles of education, the generalization *stated, not induced* from abundant concrete detail, or the mass of unorganized facts presented to be "learned by heart," when no principles have been established to explain and clarify them.

Grammar School Children still Children. — They both ignore the truths that grammar school children are still children, with children's limitations, and that knowledge is the result of growth. The normal child beginning to use the "big" geography is twelve years old. He has a twelve-year-old child's limited vocabulary and very limited knowledge of the world. Yet he has thrust into his childish hands a textbook stating in broad general terms the great truths or supposed truths of the earth's formation and present conditions as to climate, surface, and relations to the solar system, not developed from observation or present knowledge, but generalized and stated in words that require a dictionary with each sentence, and this information his childish mind is supposed to take, assimilate, and use in future study. Truly the cry of the children against the ignorant, well-meant assaults of their older well-wishers never ceases.

The advanced geography, like its primary predecessor, should appeal to the interests of children as children, should present to them a great number of interesting and illuminating detail about a comparatively few topics, and should develop from these a few important fundamental principles which will serve as an apperceiving basis for all future geographic knowledge. It should be first extensive, *very*, and should gradually become in-

tensive as the children gain power to see and apply principles.

The first duty, then, of the writer of a geography for grammar schools, as for primary schools, is selection and elimination. The second is the presentation of the selected matter in simple language and with abundant interesting detail, so as to arouse and hold interest and, by degrees, in the natural way of growth, to establish the few fundamental principles.

What interests Children. — What geographic matters interest children in the grammar schools? The same as in the primary, first, people, always people, how they look, how they dress, how they act, how they work, and how they play, — how they live. Second, nature, that which is all about them, rocks, trees, flowers, animals, rivers, oceans, hills, mountains, weather, and the relations of all this to themselves and to other people. Third, how man has modified and utilized nature, as shown in cities, industries, and institutions. This is geography, of course. The important thing is to begin right and to proceed from existing interest to ever new and widening interest.

City and Country. — Children, like ourselves, divide the world into cities and "the country." This is a fundamental division, — places where men live close together with comparatively little of nature as an element in their lives, and places where they live apart, with nature as the principal environment. Some features, such as the weather and the sun, moon, and stars, day and night, and the seasons, and perhaps hills, a river and an ocean, also government and other social institutions, are common to both. But the differences are greater than the likenesses.

For the city child it is easier to develop from his environment a knowledge of human institutions, such as government and commerce, than for the country child. But for the country child natural phenomena and earth forms — the facts of physiography — are more easily developed. But both may be utilized for all children as the starting points for the establishment of the fundamental facts of the two great interlocking divisions of geography, natural conditions and human institutions. The study of the relations of these two follows naturally.

What can the Teacher Do? — The teacher may naturally say here: "That is all very true, but what are we to do about it? We have to use the textbooks supplied."

That is true, of course. Hence it is all the more important for the teacher to have a very clear conception of the aim of teaching geography in order that, even if compelled to use poor books, he may make the best use of the material furnished by the books, may organize it properly, and may supplement it by all the means in his power.

Duty of the Superintendent. — The first duty rests upon the superintendent who makes the local course of study. He should lay out the work in proper groupings, selecting the significant central features, and should show how to use the material furnished by the textbook and how to supplement it from other sources, by means of pictures, lantern slides, and concurrent reading. He should supply carefully prepared lists of available material, which teachers may secure.

If possible, every school should have a good lantern, with an abundance of well-chosen slides suited to the

work of different grades. Some one room can easily be supplied with dark curtains to be used on occasion by different classes.

Besides this, each school should have a collection of photographs illustrating various phases of geography. These can be used by the different classes. And, of course, each school should have sets of the best geographical readers for the work of each grade. This supplementary reading matter should be carefully classified to fit the course of study, so as to make the study of geography vital, and to keep the teachers from the deadly routine of the textbook.

In small towns a single lantern and set of slides, a single collection of photographs, and a central library of supplementary reading may be made to serve all the schools by a little care in arranging the time schedules.

What one Teacher Did. — If the authorities do not organize the work in this way, then it is for each teacher to do the best possible in this direction. I have known an individual teacher to carry out a scheme of geography teaching so successfully as to furnish a model to an entire school system. Among the devices that she employed was one of having geography days set apart devoted to some particular geographic feature, usually a race or people, for example, a Japan day, when everything characteristic of the Japanese that the children could obtain appeared in the room. Japanese pictures and draperies and costumes and products were all represented. Children appeared in Japanese tableaux, showing some striking characteristic of the national life. Japanese stories were told. Naturally all available sources of knowledge and of material for representation

were drawn upon. Great enthusiasm prevailed; the facts found out and told or written by the children, you may be sure, were the facts that interest children. It was a good study of what to teach in geography.

On other days, as called for by the course of study, other themes were treated with a like appropriateness. But, whatever the topic, whether Japan or South Africa, or Germany or England, or coal mining, or dairying, or making cotton cloth, a very real and very vivid impression was left with the children. They really knew what they had studied. They could never again be wholly indifferent to any one of these subjects. Moreover, the knowledge was organized. It was all properly grouped about a suitable nucleus. Through it the children were supplied with apperceptive centers for the placing of new facts and with geographic principles to explain new phenomena.

This was accomplished by a single teacher with many successive classes, without much help from her superior officers. It should be encouraging to teachers who know how geography should be taught but are compelled still to use inferior textbooks or to follow antiquated or insufficient courses of study. Unless teachers grasp these principles, not even ideal books and courses of study will secure the best results.

CHAPTER XVIII

Nature Study

"Nature Study" has meanings almost as numerous as the schools pursuing it. It came in late as one of the forms of protest against the game of logomachy into which school studies had degenerated in the third quarter of the nineteenth century. From its name it is evident that it was intended to indicate a "return to nature," a reëstablishment of the connection between the education of children and the physical environment in which their lives must be spent.

Aim of Nature Study. — At its best it is the study of the phenomena of the physical world with the more or less definite aim of discovering some of the laws that cause them, and their significance to human beings. It differs from the study of natural science much as the "language lessons" of the elementary school differ from grammar. Its chief purposes are to open the eyes to the wonders and beauties of the environing world, to create sympathetic interest in all animate creatures, and to restore the sense of reality in a system of education quite given over to verbal statements about things. It was a product or corollary of the interest in scientific study which followed the promulgation of Darwin's theories. The aim is most worthy, and there was, and still is, abundant need for such an equilibrant.

Still Chaotic. — However, nature study in elementary schools still is in a chaotic, unorganized, possibly a formative, state. It began with the "object lessons" which some of us remember, a loose, unsystematic exercise consisting mainly of reciting stated facts about the common phenomena of physics, accompanied by a little individual observation. This gave way to a more orderly study of elementary science. In some schools, quite elaborate systems were developed, with full courses in the elements of botany and zoölogy, and even with special supervisors to direct the instruction. These attempts rather overshot the mark and contributed much to the overcrowding of the curriculum. At present the study seems to be settling into the place of adjutant, supplying topics and material for correlation with language and with geography, varying with the interest and knowledge of the teacher. Its best present-day manifestations are school gardens, terraria and aquaria in the schoolroom, and "field lessons." Manifestly nature study must vary, more widely than any other study, with the environment.

Early Blunders. — The greatest mistake of the earlier teaching of this subject in schools was the attempt to observe natural objects out of their natural relations. A bug, a frog, a crayfish, were brought in to the school, dissected, discussed, and scientifically classified. This had little value, very little, in cultivating close observation. It did nothing to acquaint children with environing nature, to open their eyes to the beauties of sky and meadow, brook and plowed field, to make them love the voice of the bird, wonder at the marvelous adaptations of plant and animal life. The objects chosen were difficult to

obtain and, when observed away from their habitats, not very interesting to the children. The anatomy of the animal or the plant was treated as of more consequence than its life.

The Near rather than the Remote. — Nature study for children should be the study of the near rather than of the remote. The geological history of a grain of sand from the road is vastly more worth while than that of a fragment of gneiss from the museum. Nature study should be out of doors as far as possible, the study of what is immediate and common.

Professor L. H. Bailey says in "The Outlook to Nature": "The first consideration of special study should be the inhabitants of your yard and garden; they are yours, or if they are not, you are not living a right life."

Even in the most crowded parts of a big city, the paving stones and the gutters and the ever present sparrows present interesting problems for nature study. Besides, there are the parks, with their birds and trees and flowers.

In the small town and especially in the country, nature is everywhere asking to be understood. If children could only be put into sympathetic touch with her "in her various moods," it would go far toward restoring a more beautiful and a saner life.

In the language of Walt Whitman (quoted by Professor Bailey),

"There was a child went forth every day,
And the first object he look'd upon, that object he became,
And that object became part of him for the day or a certain part of the day,
Or for many years or stretching cycles of years.

"The early lilacs became part of this child,
And grass and white and red morning-glories, and white and red clover, and the song of the phoebe-bird,
And the third-month lambs and the sow's pink-faint litter, and the mare's foal and the cow's calf,
And the noisy brood of the barnyard or by the mire of the pond-side,
And the fish suspending themselves so curiously below here, and the beautiful curious liquid,
And the water-plants with their graceful flat heads, all became part of him."

Lord Avebury, in a fine passage on the same subject, remarks: "If Spring came but once in a lifetime; if the sun rose and set once in a year instead of once in a day; if a rainbow appeared once in a century; if flowers were as rare as rubies and dewdrops as diamonds, how wonderful would they seem, how they would astonish and delight us. We undervalue them because they are lavished on us. The very word 'common' most improperly implies some disparagement. If we trained our minds properly in the appreciation of beauty, we should, on the contrary, wonder at and admire them all the more."

In a still finer passage, Emerson says: "If the stars should appear one night in a thousand years, how would men believe and adore, and preserve for many generations the remembrance of the city of God which had been shown! But every night come out these envoys of beauty, and light the universe with their admonishing smile."

But the sort of harmony with nature suggested by Whitman and of appreciation indicated by Avebury and Emerson are not to be brought about by observing and

drawing a dead bug, even though observed "right end first."

Beauty of Life. — There is one aim of nature study in particular that should be emphasized, the beauty and worth of the living thing, and its right to live unless it works harm to man or its body is needed for his legitimate use.

That relic of the barbaric days of the race, the silly desire to kill by trap or gun harmless animals for "sport," should disappear before interest in the lives of animals. The glory of the hunter who bravely hides in ambush and shoots a harmless unsuspecting bird or deer for mere pleasure should be turned to shame. If the children desire to hunt, the camera is a much better implement than the shotgun and secures vastly more interesting results.

This change is bound to come as we become more enlightened. Since the introduction of nature study into schools, within my recollection, cruelty to animals by both children and adults has been greatly lessened. Our entire nation has become more humane. The next step is the elimination of the "sportsman" who sneaks behind a tree to shoot an inoffensive beast or bird, giving him no chance even for a fair fight for his life.

Nature study should leave the children richer in appreciation of the wonders and beauties of the world about them, with eyes keener, spirits fresher, sympathies broader for all creatures, and themselves in the way of becoming larger and simpler men and women.

CHAPTER XIX

Nature Study

METHODS OF INSTRUCTION

The method of nature study in the elementary school has been too often a feeble copying of the method of the scientific laboratory of the university or of the investigating specialist, whereas it should be almost its antipode.

Natural Setting. — Wherever possible, as was clearly indicated in the preceding chapter, it should consist mainly of the study of objects in their natural setting and of phenomena as and where they occur, the teacher always having in mind that the aim is chiefly, not to give scientific knowledge, but rather to arouse interest, even enthusiasm, regarding that which is all about us.

Study out of Doors. — Whenever possible also, and it is always possible in the country and in small towns, it should be at first out-of-door study and of common everyday objects and phenomena. A garden cultivated on the school grounds is the best laboratory for the study of plants and of some animals. The growth of flowers or common herbs from bud or bulb to maturity is a never-failing source of pleasure and interest, and makes possible the consideration of soils and of the various friends and enemies of the plants. It is not necessary to elaborate upon school gardens. There are several books that treat this subject fully and satisfactorily.

Field Excursions. — The field excursion is another excellent means for developing interest and acuteness of observation, and provides opportunity to gather material for indoor study.

The groups going on such an excursion should be small for each teacher. While the children should be encouraged to observe all the phenomena, excursions should have some definite aim, as the action of a brook, the growth of some particular crop, the study of certain nesting birds, the observation of the habits of some animal in its native habitat. If possible a good field glass and a camera should be taken, the former to enable the observer to watch the actions of animals without disturbing them, and the latter to obtain accurate and permanent reports of especially interesting and illuminating appearances.

It is well for the children to take notes of what they observe, to be discussed later in the schoolroom, and possibly written about for language exercises.

Out of doors the large and plainly visible aspects of nature should be studied, such as cannot be observed in the schoolroom: in the physical realm, such things as the effects of winds and of rain, of clouds, and of running water; in the realm of living things, the grouping of trees and plants in pastures and in woods, the habits of birds in pairs and in flocks, and of groups of animals at pasture.

Nature Study in Cities. — The city presents its own problems. But in most of even the larger cities occasional excursions to the fields or to the parks are possible, and in some cases room for gardens is obtainable in the school yard or upon the roof.

Window boxes, also, in which carefully chosen seeds germinate and grow to maturity, are always possible and offer opportunity for much interesting observation and discussion.

In the Schoolroom. — Nature study in the schoolroom naturally requires a method quite different from that out of doors. Here, in the main, individual objects must be studied, removed from their natural setting. These objects should be such as naturally interest children, and are readily obtained. The domestic cat, dogs, rabbits, chickens, are better than the amœba or even the crayfish.

Study Function. — The study of these objects should be the study of function or of anatomy as related to function and never of mere anatomy. Dissection should be always taboo. An excellent study is that of the comparison of the different functions of similar organs of different animals, as the fore limbs of fishes, birds, quadrupeds, and man. The questions that always call for an answer are: What is this organ for? What does the animal do with it? How does it contribute to his needs as a living being? Suppose noses are the subject. What kind of nose has the rabbit, the cat, the dog, the pig, the child? For what does each one use his nose? How does its particular form administer to its usefulness?

The degree of intelligence displayed by different animals is an interesting topic. What does each one do through sheer instinct? What actions are dictated by intelligence and some degree of reason?

Relation of Man to Nature. — Then always the relations to man of the objects or animals observed

should receive careful consideration. What does each contribute to our well-being, and how?

This study should lead to a consideration of the treatment of living nature, both plants and, especially, animals. What is due each one, from us? How far are the lives of lower creatures sacred? Under what circumstances may they rightly be taken? When and to what degree should they be unmolested? To what degree of freedom are these creatures entitled? What right have we to deprive them of freedom, to cage them, to utilize them? With older children, even the use and abuse of "vivisection" may be discussed with profit.

Correlation. — As has been intimated, nature study is readily correlated with other subjects, notably with language study. But, for this purpose, the study should be of nature as it is, the sky, the weather, the brooks, the hills, the birds and beasts, all in natural setting. Nature studied in this way is the best introduction to geography. Nature study should also be closely allied with physiology, as indicated in chapter XXI. Of all the possible correlations, that of the greatest importance is with literature. Mere informational books about nature are dangerous in the school. They are apt to be substituted for first-hand observation. At the most they should be used only to supplement and explain what has been observed. But the study of the poets of nature and of such prose writers as Thoreau and Burroughs is most useful in connection with direct observation. These are they who see the hidden spiritual significance of the phenomena of nature. They point out the rich analogies between the wonders and beauties of the physical world and the spirit of man.

It is well to observe the weather, the marvelous changes of cloud and sky wrought by wind and rain and sunshine, and while doing this to read and memorize Shelley's "Cloud," or Moore's lines beginning:

> "O God, thou art the life and light
> Of all this wondrous world we see."

or Shakespeare's sonnet

> "Full many a glorious morning have I seen
> Flatter the mountain tops with sovran eye,
> Kissing with golden face the meadows green,
> Gilding pale streams with heavenly alchemy."

The highest function of literature is to illumine the common things of life and to point out the ever present analogy between the things we see with our eyes and our own spiritual aspirations and experiences, and this can be made plain to children in correlation with nature study more readily perhaps than in any other way.

Résumé. — The aims of all method in nature study should be: (1) to acquaint the children with nature as it is, as God made it; (2) to show them its relations to men, how they have modified it, for what purpose and with what rights, to the end that children may become lovers of nature and wise in its use; and (3) to show the spiritual significance of the natural world, its laws, its phenomena, its modes of life.

> "To him who in the love of Nature holds
> Communion with her visible forms, she speaks
> A various language; for his gayer hours
> She has a voice of gladness and a smile
> And eloquence of beauty, and she glides
> Into his darker musings, with a mild
> And healing sympathy, that steals away
> Their sharpness, ere he is aware." — BRYANT.

CHAPTER XX

Physiology

The subject of physiology in a course of study for public schools should properly be considered among the natural sciences. But its position in our schools is so peculiar, because of an anomalous and to a degree artificial correlation with ethics and politics, that it seems necessary to treat it as constituting a class by itself.

Analysis of the Subject. — Human physiology is the science of the human body considered as a living organism. It deals with the functions of the various organs and rests upon anatomy, which treats of the structure of the body as a whole and of its different parts. Anatomy may be learned directly and completely from the study of dead bodies. As physiology deals with life, it can be studied properly only in living organisms.

Hygiene is a corollary of physiology. Its function is to show how the various organs of the body may be made to perform their functions in a normal manner. Its province is the laws of health. The order of importance of these subjects, to children especially, is (1) Hygiene, (2) Physiology, (3) Anatomy. The educational order is the same.

Even quite young children can be taught profitably such simple laws of health as the importance of cleanliness and the danger of eating certain things, such as unripe fruit. Later, with the growth of curiosity, not only

may the list of laws be extended, but reasons for some of them may be given, thus leading naturally to some of the facts of physiology. Later yet, even some anatomical facts can be made to serve a definite hygienic purpose, and thus anatomy may come in at the right time and by the right door.

Errors in Treatment. — This inductive treatment of the subject, in obedience to the laws of mental growth, seems so simple that one might expect to find it in our schools. But, strangely enough, the psychological laws obeyed in treating other sciences are ignored when the subject is the human body. In the primary grades the instruction, as indicated by the text-books, consists in giving information about the body, chiefly anatomical, almost always uninteresting, and often misleading, interspersed with perfunctory advice in regard to hygiene and alcohol. The scientific method of the nature study lesson upon bird, beast, bug, or plant appears nowhere.

In the higher grades, especially the high school, again anatomy is to the fore with scalpel, microscope, and acid bottle. In very few schools is the wonderful and beautiful human body, a living organism manifesting in every part adaptability, symmetry, and usefulness, so studied as to inspire respect and to suggest powerfully to the children normal health and beauty, and to secure obedience to the laws of health because of the innate dignity and worth of the body, the home of the soul.

Legislative Meddling. — How far this perversion of the subject, this retention of a method of instruction long since discarded in nearly every other subject, is due to legislative meddling it is impossible to say. Unques-

tionably, however, to a considerable degree the well-intended efforts of good people to secure a certain amount and kind of catechetical instruction in a subject of great ethical importance, by force of law inserted into the physiology books, has led both authors and teachers away from a sane and well-balanced view of the subject. The necessary artificiality and cumbersomeness of a part of the book has naturally affected the remaining parts.

Two Points of View. — There are two points of view from which the subject may be considered, and in planning a course of instruction both must be used. One is scientific, the other practical. The former considers the human body as in itself a proper object of study from the biological point of view like any other body. The other, regarding chiefly hygiene, has to do with the care of the body so that it may continue in a healthy state and may perform its functions normally.

The acceptance of two points of view, while broadening, is at the same time confusing. The question really is where to place the stress. If hygiene is kept in prominent relief before the eyes of the children, with science as a mere incident, getting its value from its relations to hygiene, we have one sort of results. If science is the manifest chief aim, with hygiene as a somewhat incidental though important corollary, we secure a quite different result. Which shall it be? Surely no thoughtful teacher can be in doubt.

Dangers from Wrong Emphasis. — I am not sure but complete neglect of the subject would be better than a constant authoritative iteration of so-called laws of health. In the first place the "laws" whose efficacy is unquestioned are very few and can be taught simply,

without spending much time and without the cumbersomeness and the wastefulness incident to the usual teaching of " physiology " in the common school. To do more than this, with the stress on hygiene, is to center the thoughts of children altogether too much upon their own bodies, by the influence of suggestion, and to cause the very evils it is desired to prevent. Excessive bodily self-consciousness is dangerous at any age. The unhappy hypochondriacs and the innumerable victims of all sorts of quackeries are largely men and women who have acquired the habit of giving constant attention to the " laws of health." The thoroughly healthy person thinks little of either health or of possible disease. With children, excessive bodily self-consciousness produces even worse results. It arouses a morbid curiosity as to vital and sexual facts before they come normally into consciousness, and tends very definitely and surely to indecent and immoral practices.

Untimely Knowledge. — I have considerable sympathy with the good woman who wrote to a teacher: " Please excuse Jennie from physiology. I don't think it is nice for her to learn about her insides." Even important truths learned at the wrong time and without proper setting may be very mischievous. To this class belongs much of the information given to young children under the guise of " hygiene," relating to adult life and adult conditions, and not comprehensible by young children without distortion. This is the real ground for objection to the extreme requirements of the laws in some States regarding the teaching of " temperance hygiene." They overdo their office, so that children are supplied with facts, not only unnecessary to temperance or even total

abstinence, but likely to create morbid curiosity and produce the evil they aim to remove.

I recall one textbook, at one time at least highly approved and widely used, which distinctly, in so many words, advised teachers to bring to school samples of various alcoholic liquors and have children taste them, so that they might be able to distinguish them. One mother, the wife of a prominent minister and an ardent temperance advocate, said to me one day: "My little girl (aged eight) came home from school to-day and told me about more kinds of liquors than I had ever heard of." Another little girl said to her mother, "I hate physiology, but I just love the rum part."

Is it not evident that children so taught have a quite unnecessary and untimely knowledge of matters out of their natural ken, and that such knowledge is likely to do more harm than good? These excesses and distortions follow inevitably a treatment of physiology directed mainly and manifestly from the practical or hygienic point of view. Such instruction tends to produce morbid bodily consciousness and unnatural curiosity. It leads directly to various forms of personal immorality, and, besides, makes infants arbitrary and cocksure judges of adult actions. If has nothing to defend it, either educationally or ethically, except such good intentions as form the proverbial pavement of a certain unhappy region.

What is the natural effect of teaching physiology from the scientific point of view with hygiene and ethics as inevitable and most important corollaries?

Basis of Character. — Let it be remembered that moral character results from experience more than from mere

preachment, that verbal knowledge as to right and wrong, with most people and on vital questions, is one of the least influential forces in securing good conduct. The springs of conduct lie deeper than mere words. One of the great evils of all times is the substitution of external acquiescence in verbal righteousness for deep-seated and high-principled morality. The too familiar bank defaulter who "stood high in religious circles" is doubtless the result of this unconscious substitution and his subsequent lack of defense against real temptation. A sane view of life in its entirety is surely better than the exaggerated prominence of some single "important fact." Hence hygiene and "bodily ethics" should result naturally from a sane and suitable knowledge of the body.

Without doubt the human body, the most highly organized form of animal life, is quite as worthy of study as the clam or the beetle. Moreover, it is always present for first-hand observation, the basis of all scientific study.

What to Study. — The study, for the younger children especially, should always be of visible form as related to function. Hence the external parts should be the first parts studied, and for a long time they should be almost the only parts considered. The slightest information about internal structure, as a basis for some necessary hygienic lesson, will suffice. For example, the importance of saliva in preparing food for use in body-building may wisely be explained as an argument against chewing gum and against the vile habit of promiscuous spitting, so likely to be affected by boys at a certain age. Even in the grammar grades any attempt at an elaborate study of internal organs is to be depre-

cated. The study by observation of the corresponding organs of lower animals dissected in class is often offensive to sensitive children and can result in little good. In the primary grades the study of internal parts should be merely the most general and of vital organs, — sufficient to give support to what must be taught about the action of the circulatory system and its relation to exercise, breathing, clothing, and fresh air. The digestive system and the nervous system should receive in school but the briefest attention, enough merely to point to certain very simple hygienic principles. The study of most of the visible external organs, however, is both easy and profitable. The hand, the foot, the skin, the eyes, ears, and teeth may all be studied so as to lead to proper respect and proper care.

Scientific Method. — The method, it is needless to say, should be at first altogether scientific; that is, gathering facts by observation and inducing conclusions. A further characteristic of method should be the comparison of the human organ studied with the corresponding organs of other animals. This not only makes the knowledge more definite and accurate, it gives the children a clear notion of the superiority of the human body and tends to enhance their respect for it, a necessary basis for hygiene and bodily morality.[1]

Study of the Hand. — Suppose you begin with the organ most easily studied, the hand: let the children observe their own hands, note all their parts and what they can do. Function explains and justifies structure.

[1] Mrs. E. B. Hallock, in her book, "Some Living Things," has developed this method for children perhaps more fully than any other writer.

A number of lessons may well be spent in this study of the parts, possible positions, and functions of hands. How many joints are there, and what are they for? What uses do the nails serve? What can the fingers do, especially the thumb? Countless similar questions will stimulate curiosity and observation and lead directly to rules for the proper care of these wonderfully useful and beautiful organs.

The interest in the study and the value of it may be greatly increased by a comparison with the parts of other animals corresponding to the hand, as the fins of fish, the wings of birds, the hoofs of horses and cattle, the paws of cats and dogs. The children can see readily the comparative inflexibility of the " hands " of these animals and their consequent limitation, each to a single function or a comparatively few functions. The fin of the fish is for swimming only, the wing of the bird for flying. The adaptation in each case is perfect, but almost absolutely confined to the single function. The hoofs of animals also have each a single adaptation, and a further partial usefulness in fighting. The paws of cat and dog have several uses. The hand of the monkey has many, but not till we get to the hand of man, with its prehensile and supposable thumb, do we find universal adaptability. The advance from adaptation to adaptability, which includes pretty nearly the entire history of evolution, is easily shown in the study of the hand. Especial attention should be given to the thumb. The proverbial prominence of the " sore thumb " speaks volumes for man's place in the cosmos. A history of thumbs and chins would be a history of later animal evolution.

Study of the Skin. — Another excellent study is the skin, — its uses, its delicacy and beauty, its relation to health, and its proper care. Here, too, comparative study is most helpful. The unprotected sensitive skin of man shows a great advance over the coarse, hair-covered skins of lower animals. It enables man by adding or removing artificial covering to live in all climates, whereas the lower animal is limited to a comparatively narrow sphere. The polar bear, being unable to remove his overcoat, must live where overcoats are "comfortable" the year around. Instruction in the care of the skin and in the avoidance of "cosmetics" follows easily.

These are suggested as typical methods of studying the parts of the body, so as to give genuine and useful knowledge as distinguished from verbal and useless memorization. They may be extended to cover all that it is wise to teach children about their bodies, and may lead easily to instruction in such laws of health and bodily morals as it is important to teach.

"Scientific Temperance." — Where the law interferes and requires not merely more instruction but that of a wholly different kind, the teacher should try, in so far as possible, to make the instruction sensible and to avoid the evils so easily flowing from perfunctory ethical instruction, especially when applied to disputed facts.

As far as the laws allow, keep within the bounds of certainty. This offers a field wide enough for such instruction as will tend to persuade children to let narcotics and stimulants alone. Keep in the background detailed instruction as to the constituents and qualities of "rum." Keep in the foreground the beauty and utility of a normally healthy body and the dangers of

stimulation, especially in youth. Avoid general statements likely to lead children to criticize their elders and bring disrespect into families, and dwell instead upon the evils to which children in childhood are subject.

Correlations of Hygiene. — Much of the necessary instruction in hygiene can be given in connection with other exercises, such as domestic science and gymnastic drill. With the former much can be taught in regard to food values, wholesome and unwholesome food, the proper manner of eating, and kindred topics. But the great field for correlation is the athletic or the gymnastic. In sports, physical vigor becomes an appreciable *desideratum*, not a mere abstraction, or a detestable school topic. If boys and girls are training for the basket-ball team or a foot race, or for any other contest requiring strength and endurance, it is not difficult to persuade them to bathe, to eat carefully, to sleep with their windows open, and to let chewing gum and cigarettes alone. The instructor in gymnastics, if such there be, is the best teacher of hygiene. He deals with the present, not the remote, with the child's own ambitions and desires, not those of teacher and parent merely. The important laws of health are simple and easily followed, and if they are taught in connection with some appealing end in view, obedience to them can be made a habit, without danger of that morbidity which so frequently follows prolonged contemplation of our " inward states." Older children may be taught a few simple facts about the hygiene of the home, such as the importance of abundant fresh air and of sunshine, the necessity of cleanliness and the reasons for segregating those ill with infectious diseases.

In all these respects the school itself should be a model,

a condition, alas, too seldom fulfilled. Both school officials and teachers are quite too frequently ignorant of the simplest laws of ventilation. Some have no "noses for foul air," a serious defect in a teacher. "Second hand" air, with a certain peculiar nauseating odor, is one of the recognizable characteristics of the average schoolroom in many of our cities. In some cases patent systems of ventilation that work beautifully in theory are responsible for the lack of fresh air in schoolrooms. In others where there are really effective systems with forced draughts, teachers, ignorant of the possible difference between fresh air and cold air, apply the wrong remedy.

Whatever the cause of foul air in a schoolroom, it should be remedied effectively and permanently. What greater absurdity is there than for children in the physiology class to be studying about the respiratory system and the purification of the blood, while themselves contaminating their own blood by breathing a choice mixture of carbon dioxide thrown off once or twice or thrice from the lungs of their neighbors, exudations from the unwashed bodies of the children about them, and disease germs "too numerous to mention"?

The air in the schoolroom should illustrate the principles laid down in the textbook not only for the sake of the children while in school, but also for the sake of its influences on the home. Children in the school should be made so sensitive to foul air that they will rebel against it in the home.

Résumé. — In general, let hygiene be hygiene, and not therapeutics. Treat the body as worthy of study and worthy of respect and of the best care. Let the instruc-

tion be positive and suggestive, rather than negative and prohibitory.

This "house beautiful," the home of the human soul, is the highest of visible creations. When God, having made man's body of the dust of the earth, breathed into it the breath of life, this body received a new dignity, unknown before. It should hence be kept pure and sweet and beautiful. Surely this is basis enough for instruction in bodily morality.

SEX HYGIENE

In connection with the study of physiology it is perhaps well to devote a little space to a group of subjects which have been discussed of late vigorously, though somewhat vaguely, under the general heading, "Sex Hygiene." A number of moralists, and especially advocates of the new so-called science of eugenics, urge that children in schools should be made acquainted with the principles of life reproduction, especially as applied to human beings, and that such instruction should be extended to include the physiology and hygiene of the sex organs, to the end that children and youth may be taught how to keep these organs in good health, how to protect themselves against sex vices, and how to become in the end the right sort of parents. It will be seen that while these subjects are closely related, they are after all different subjects. The writers who are urging their introduction into common school curricula seem, however, to suppose that they are all one subject, and that instruction in the fundamental facts of life reproduction will lead so naturally to the more intensive knowledge of sex as to constitute a sure safeguard against prevalent

vicious habits, and against the social dangers that are related to sex.

Importance of the Subject. — Beyond doubt, it would be well if discussion of sex relationship could be more general and easy than it is, provided that such discussion could be always hedged about with the proper restrictions and safeguards. If children could be made aware of the mode of propagating individual life in animals, as well as in plants, and be led to apply this knowledge to human beings, it would no doubt be valuable, and would save the growing generation from many of the evils that are due to ignorance, to partial knowledge acquired in the wrong way, and to pruriency generally. Further, when children become older, particularly at the dawn of adolescence, if they could be made aware of certain well-known social dangers dependent upon sex, such knowledge probably would prove a valuable protection, again provided, as always, that it be imparted in the right way and by the right people, so as to create scientific interest and moral fear, but not to rouse prurient curiosity, or excite imagination and desire in young people at an age when such feelings are very near the surface.

The Crux of the Question. — Here is the crux of the question as to the relation of the common school to such knowledge. One may admit without reservation the value of knowledge of the sort indicated to the developing youth, and yet see in the introduction of these subjects into a common school course practical dangers and difficulties quite sufficient to outweigh the possible advantages. Indeed, I personally am quite strongly of the opinion that for the present at

least instruction in this whole group of subjects must, in the public school, be limited to the very simplest and broadest facts of life-reproduction as shown in plants and in oviparous animals. The application to mammals of the principles so found out certainly cannot be carried very far at the present time in schools. These are my reasons: —

Mixed Classes. — Most public schools have both boys and girls in the same classes. While this would not interfere with instruction based upon the study of plants and oviparous animals, as indicated above, such instruction being naturally and properly given in the primary grades, it would stop any further application to higher mammals, because such instruction to be of value would have to be given to the older pupils; that is, to the adolescents. Unhappily, in every school of advanced grade, a very considerable number of pupils already have considerable knowledge of sex relationship, for the most part obtained surreptitiously, and of the wrong sort. And such knowledge in case of definite instruction in sex hygiene would lead to unfortunate self-consciousness, and in many cases mutual consciousness, which would tend to inflame the imagination, and in addition would render the instruction very embarrassing to both teacher and pupils. The condition is very different from the imaginary ideal condition, in which children from infancy are carefully guarded and given the right instruction at just the right moment, step by step, so that there is no evil imagination at any time. It is impossible to plan a scheme without taking account of the actual mental states of children, which involves much of the sort of knowledge of which I have already spoken. In those high

schools in which the sexes are separate, and in boarding schools of the same sort, it is possible that more definite instruction can profitably be given. Whether this is true in any particular case will depend upon local conditions, which do not admit of generalization. In small schools for pupils of but one sex, where the relations between teachers and children are sound and wholesome, unquestionably some instruction of a healthful nature, on even the most intimate subjects, may be given. In larger schools the difficulty is greatly increased. It is almost safe to say it increases in geometrical ratio to the number of students, because of the moral influence of the transference of thought due to the presence of numbers, containing always some abnormally self-conscious as to sex, some morbid, and some vicious.

Unfitness of Teachers. — The great danger from any general introduction of this important topic into common schools, however, is in the teachers themselves. That does not mean that teachers are not moral. I believe that they are so beyond the members of most other professions. Not only are they conventionally moral, but they have high ideals and exalted standards of right and wrong, and are extremely conscientious. They undertake all imposed tasks, and would undertake this one, with the keenest sense of responsibility and the utmost desire to do good and not harm. But how many of them are qualified? We must take conditions as they are and not as we might desire them to be. A very large majority of the teachers of this country are very young women of little experience, and very meager knowledge outside the narrow field of the common school course of study. Many of them have

slight pedagogical skill and no pedagogical training. Many of them, probably a majority, are themselves very ignorant of those things that a eugenist would have them teach. Many of them are still adolescent and sexually self-conscious. Attempts on their part to give instruction on these matters, even in the simplest and broadest way, if they have in mind the relation of their instruction to the sex question, would greatly embarrass them.

Grave Dangers. — It is to be feared that any general course of study in sex hygiene, to be administered through the usual channels and taught by the ordinary teachers of our common schools, instead of doing good would greatly magnify the evils aimed at, instead of decreasing them. Without imparting much protective knowledge, it would do that very dangerous thing, make young people prematurely conscious of sex. The instruction to be given, needful as it is, should be given only by those thoroughly familiar with the subject, and also wise, strong, and mature enough to impress young people without exciting them, or arousing undue curiosity. Such instructors, unhappily, in any system of schools, public or private, are very few.

Regretfully, I have been convinced that for the present at least the necessary instruction beyond the very broadest facts of life reproduction must be given through some other agency than the common school. One thing, however, might be done and should be done, — in normal schools and in all schools and colleges for the training of teachers, there should be very full and careful instruction in the subject of sex hygiene, sex relationship, and all

that has to do with the reproduction of life, by thoroughly qualified specialists, to the members of the sexes separately, so that the students going out to teach may have knowledge enough to guide them in whatever efforts they may find it possible to make toward leading their pupils to a wise and wholesome sex life. This is entirely possible, and would be the opening wedge. If we could in this way get each year a large body of well-equipped teachers qualified for this special phase of the work, possibly some of the other difficulties might be disposed of, because the one great difficulty in the way of the early introduction of sex hygiene into common schools is the lack of fitness of the teachers to do the work.

School Physicians. — At the present day many school systems, especially in the larger cities, employ physicians to visit the schools, chiefly to discover the presence of contagious and infectious diseases. It is possible that in the high schools at least, and perhaps in the grammar schools, these physicians might add to their usefulness by talking to the boys and girls separately now and then upon certain solitary vices, and that such talks, in addition to checking these vices, might have a tendency to create wholesome thinking and feeling on the part of the boys and girls.

What I have here outlined seems to me the limit of possibility within the near future in regard to teaching the facts and principles of sex hygiene. If the time ever comes when the fundamental crucial facts of the reproduction of life can be taught to the young in such a way as to do more good than harm, it will be indeed a happy time. But I fear it will not arrive before the millennial days.

CHAPTER XXI

Writing

Writing is the most purely mechanical of all the arts taught in school. It has no æsthetic value worth considering and no intellectual value. Its sole function is to enable one to record his thoughts so that others may read them with the least effort. Because of its limited value in education, the time in learning to make this record should be reduced to the minimum.

Children learn to write by writing, and most of the writing necessary for learning to write can be obtained in connection with the other school subjects. A little time spent upon the form and quality of the penmanship in ordinary written exercises in arithmetic, language, and other topics will obviate the necessity of devoting very much time to barren writing lessons.

Too much "Fuss." — There is altogether too much "fuss" made over learning to write. There are but two essentials of good writing, legibility and speed. Beauty of form is of so little consequence to the ordinary person as to be negligible in education. Unquestionably that method of writing is the best that enables a child to learn to write legibly and rapidly, with the least possible expenditure of time and effort. It is doubtful if there is any such single method.

There was much to be said in favor of vertical writing, now fallen into general disfavor. Children certainly

learned to use it with little effort and to write legibly. Second grade children could write their short sentences in vertical script, so that any one could read them easily, something that was unknown before its introduction. Whether the same good results will follow the general return to a modified slant remains to be seen.

The question of speed was never settled to the satisfaction of all, particularly of those who had writing books to sell. Many rapid writers use the vertical form, many use some other. It would seem to be chiefly a matter of the personal equation.

Without doubt the chief criticism came from bankers and other men of the bookkeeper class, and was sheer prejudice in favor of the accustomed appearance of their account books. But be that as it may, any system that requires a great amount of time and attention to learn must justify its expenditure by better arguments than the " looks " of a ledger.

Writing is necessarily copying. In teaching it, there is no possibility of induction, and but little of development, the only approach to it being the analysis of the letters into their constituent lines, and this analysis can be greatly overdone.

Analysis of Letters. — Writing should begin with the copying of whole words, the same words that the child is learning to read. For a considerable time there should be no attempt at analysis, except the unconscious analysis made by the child himself. Later, as difficulties manifest themselves, they should be met by some simple analysis and by drill on the troublesome forms. These will vary with the children. Hence the futility of any early general analysis of letters for whole classes.

First Writing Large. — The first writing should be large, in full arm movements. The smaller muscles which control finger movements are developed rather late and they should not be forced. Blackboard writing is best at the start, in letters as large as the children please to make, the larger the better. This should be followed by writing with pencils on soft paper without rules, also in large letters. The pencils should be not less than one half inch in diameter and of good length, that the children may grasp them with their hands readily, and be compelled to use their arms to write with them. This should be followed by writing between rules not less than an inch apart. Gradually the size of the letters should be reduced to the normal, still with pencils on soft paper.

The first pens used should be blunt, not sharp-pointed, to retain the free, large movements. By the third year children should be ready for ordinary pens on ruled or unruled paper.

The cry about lack of individuality in penmanship after using any particular style, as the vertical, for example, is sheer nonsense. Individuality comes later, if it is in the individual. Any style learned in school is sure to be modified later by the user.

Children can learn to write by almost any method, but loss of time in acquiring a "bookkeeper's hand" in school is serious and there are things more worth while.

CHAPTER XXII

Motor Activities in Expression

General Literacy Modern. — Time was when illiteracy was no bar against admission to good society. Not only so, but literacy was regarded as a possession of doubtful value except as the key to a trade, something on a par with that of the smith. The average knight and lord of medieval days could scarcely read, if at all. Often he could not even write his name. He could fight, he could ride, he could dance, but reading and writing he cheerfully and somewhat contemptuously turned over to his menials. It was no more necessary for him to read his songs or write his letters than to shoe his horses or polish his armor. Indeed, he was much more likely to do the latter than the former.

Have we gone too far in the opposite direction? In these days when the descendants of these same knights seek glory not on the gory field, *vi et armis*, but *literis et stylis*, in the field of letters despised of their fathers, when the public library as well as the schoolmaster is abroad, when everybody reads to his good will or ill, when the blacksmith writes verses and the chambermaid novels, when the limerick contests appeal to the infant in arms — do we place too high a rating upon the use of words, in comparison with the other languages of the soul?

Whatever may be the answer to this question, it can hardly be doubted that in our training of the young we

have let our enthusiasm for those wonderful twin arts, which form the necessary mechanical basis for literature, close our eyes to the value of the other arts through which man expresses himself. We are word mad, and are so anxious that our youth be able to take to themselves the treasures of knowledge and thought and inspiration stored up in the world's literature that we forget to open their eyes to those other treasures, contained in the buildings, the sculpture, the paintings, the music, the machinery of the world.

On what principle of common sense can we justify this exaltation of speech, "the art of concealing thought," so far above all other forms of expression?

Value of the Doer.—In the great busy world, we value the doer, the man who expresses himself in a machine, a house, a temple, a painting, a statue, a mill, a railroad, a bank, an asylum, a lighthouse. They are the honored of all ages. But in our definition of what we call education we set up and smugly defend the little two by four image of clay which we call literacy. Then we fall down and worship it and call upon all people to bow before our little god or be sent to social perdition. A man may build factories, cities, nations, but unless he is "up" on Ibsen he is uneducated.

I am not ignorant of the many attempts to remedy this defect that have struggled for recognition for thirty years past with varying success. The "object lessons" the "manual training," the occasional attention to appreciative study of the fine arts, — all are indications of a real, if vague, sense of lack in our curricula. But these efforts as yet have been sporadic and undigested and too often ephemeral.

Courses out of Balance. — We still must ask ourselves whether our courses of study are not out of balance, whether having secured the irreducible minimum of literacy, — ability to read or write effectively, — the remaining time should not be distributed more nearly in accordance with the values of the other matters that may be taught. We have greatly extended the average of school attendance, but the extension of work has been nearly all along one line. Do we need a reform?

Two Phases of Every Course. — As stated in Chapter I, every course of study necessarily represents two phases of education: a body of knowledge to be learned, and a range of activities, to secure through expression the reactions necessary, not only to learning itself, but what is even more important, to the growth of the mind.

These two phases are naturally complementary, and hence, although the specific topic of this chapter is the latter phase, that of expression, and a single aspect of that, this brief consideration of the other phase seems to me necessary as an introduction.

All Arts Necessary. — In the economy of life all the arts have their place. He who can read the "sermons in stones" and the rest of it; he to whom Nature "speaks a various language"; he who looks with eye of appreciation upon the Taj Mahal; he who can feast his mind upon the beauties of a Venus de Melos or a Transfiguration; he who is intelligently and deeply moved by "concord of sweet sounds," surely he has a valuable education, even though his knowledge of literature be meager. And more, he who can read comprehendingly and with pleasure a locomotive, a turbine steamer, an electric lamp, a telephone, a wireless outfit, or even a compli-

cated tool, a piece of furniture, a boot, a suit of clothes, has his compensations for lack of literary training. He can put himself as really into communication with the efforts of some fellow-man to express the best that is in him as by reading a poem. Truly then, when we have passed the irreducible minimum of literacy, we need to consider well whether the children should not be led to the contemplation of more varied and richer knowledges than are contained in any merely verbal record.

Range of Activities. — This leads directly to the range of activities suggested for the course of study. Of what expressive arts should the child be put in possession, and why?

Why teach Arts of Expression. — Why teach any arts of expression? The first reason is really subconscious. It is of the nature of instinct that children should be instructed into the modes of being and doing of the race. Hence training in expressive activities always and naturally precedes the imparting of formal knowledge and the earliest knowledge imparted is that which bears upon and illumines the activities. The educative business of the infant is to kick, to creep, to walk and talk, to cry and make up faces. Knowledge is incidental and auxiliary. For a long time he cares to know only or chiefly that which will help him directly to do something. He learns to do many things, in imitation of his elders and to gratify his desires, while his knowledge, except as directly related to his activities, is practically nil. That is, he falls without effort into the life of the race, and begins to do his part as a member of it; for the great business of the race is to do things. Records, talk about it, are subsidiary or supplementary.

So the instinct of the savage in training his child to do the things that he does, in putting him in possession of the arts, the expressive activities of his people, and the instinct of the young mother, alike innocent of psychology and pedagogy, who dances her baby and, as soon as possible, encourages him to do his utmost to make himself known and felt and heard, are alike sound, alike in consonance with the evolution of man and the highest achievements of the race.

Caution to Teachers. — And we teachers need to be very sure of our ground before we switch the child off abruptly from this normal, natural, time-honored training into an empirical, unnatural searching for mere knowledge without the accompanying and vivifying activity. To take a child of six who has been educating himself in active games, using, abusing, breaking toys, making mud pies, constructing trains of cars, building block houses, living a real life, and plant him in a desk made for sitting still, and stuff him with words, repressing his natural activities, is admittedly a crime against nature. But it does not cease to be a crime when he is twelve years old in a grammar school or sixteen in a high school. To such unwise, unnatural, artificial attempts to violate the eternal laws of development are due much of the "badness," the uneasiness, and the stupidity of children in school, which move teachers to exasperation, parents to despair, and the children themselves to lawlessness, hatred of school, and truancy. So this first reason why we should teach expressive activities may be called *racial.*

Reaction Necessary. — The second reason is to provide the reaction necessary to learning. It may be

called the *psychological* reason. It is a truism that there is no learning without reaction. The impression that neither is accompanied by vivifying expression nor rests upon previous expression is either wholly barren or hopelessly and often ludicrously erroneous.

The Rigmarole. — Disregard of this great fact in teaching is responsible for the rigmarole, that most wasteful and deadening of school methods, — though quite common, — the learning and reciting of words in an established order, without thought. We little appreciate the absurd interpretations often put upon wordy rigmaroles memorized and so glibly reeled off by the children as to delude us into the belief that they comprehend what they say. Doubtless we can all recall from our own childhood these absurd notions drawn from words that we used in our school recitations and perhaps especially in prayers and other religious exercises. The well-worn "consecrated cross-eyed bear" story is no exaggeration.

Knowledge without expression is no knowledge. Reciting words about an idea is not necessarily expressing the idea at all and may not indicate the slightest conception of the idea. In the use of no other form of possible expression is deception so easy or so common. This is one reason why it is so necessary to employ many kinds of expression in the training of children.

Dr. John Dewey's experience in getting desks for the children in his experimental school shows how sadly devoted we are to apply the analogy of the tub to the child mind. "Every child is a tub, whose function is to sit still while the teacher pours into it a stream of

useful knowledge, and a good tub does not leak. Moreover, wisdom is like to good wine. Its perfection comes through resting long in quiet places. To cause it to move about prevents the settling of the lees." Upon such philosophy is a large part of our educational structure founded.

Why do Children learn slowly in School? — The infant creeps, kicks, dances, screams, strikes, plays, imitates, goes through millions of antic activities that would tire an adult to death, and through it all grows and learns with a rapidity almost miraculous. When this baby comes to school why does he learn so slowly? If a teacher could keep the intellectual growth of the children in school at even approximately its rate before coming to school, he would be exhibited as a freak.

The best in our best schools is natural baby activity utilized and extended. This is found in the kindergarten and in the rare but occasional primary school. Its secret is expression, natural, free, varied, and abundant expression — as the antecedent, the consequent, the accompaniment, the vitalizing force of impression. It is with knowledge as it is with life; the more we put into it of effort, of vital force, the richer we are in possession, in power.

The Practical Reason. — The third reason for treating expressive activities as fundamental in the training of children is the *practical* one. The more numerous the means of expression open to a human being, the greater the possibility of his rendering efficient service in life, the less the likelihood of his being "a square peg in a round hole." We *teach* children that the doer is

greater than the recorder, the warrior than the minstrel who sang his deeds, but we *train* children only in the lesser art. Each child is entitled to a training in the particular art of expression through which he can best express his best. For all the arts are but avenues of expression, through which men send the output of their souls to their fellow-men. Everything we do expresses ourselves in some degree. But the expression is often inadequate and unconvincing because we have not mastered the art that is best for us. We need a recasting of values and a study of adaptation. The great successes of the world are attained when men of rich natures have discovered the means, best for them, of distributing their riches. Indeed, individual success is almost wholly dependent upon finding means of expression, adequate and personally suitable.

If Sir Christopher Wren had tried to express himself in poetry instead of in stone, probably the world would have had some more poor verses and certainly no St. Paul's cathedral.

Do we not owe it to the children to give them such familiarity with the various expressive arts that each may both find the one that is best for him and besides may have at his command as auxiliary other arts for the enrichment of life and the widening of opportunity? Is our modern education in danger of dwindling, like Echo, to a mere voice?

Why Motor Activities. — Why should the expressive activities that are to receive emphasis in schools be motor activities? First, perhaps, because of a sort of necessary elimination. Practically all expressive activities excepting those involved in verbal expression are motor

activities. So if we are to increase the number, we must perforce include the motor activities. But this of itself speaks volumes. It seems as if Nature had sought to make it impossible to avoid any neglect of these agencies in education. If that was her intent, she did not take sufficient account of the ingenuity of the schoolmaster. Give us half a chance and we will beat Nature every time, both vitiating her method and defeating her purposes.

But there are special reasons in the nature of the mind itself why the motor activities are all-important for the very act of learning and consequently for all mental growth. The exercise of the motor activities combines in a most remarkable manner the fulfillment of its manifest function, — that of expressing thought, — with the development of mental power in the individual. The reasons for this are both scientific and practical.

Brain Areas. — The physiological psychologist will tell you of extensive brain areas in which the termini of the afferent and efferent nerves affecting motor action, observation, reasoning, and verbal expression are so closely related as to produce the utmost harmony of action. Whether as the result of some transference of power similar to electrical induction, or because of an actual physiological union, there seems to be an interchange of stimulation, so that one cannot act without rousing the others to activity.

Herein is the explanation of many common phenomena. Natural gesture, which necessarily preceded speech as a means of expression, and almost always accompanies it unless artificially restrained, is due merely to these transferred currents.

Thinking is always naturally, and almost always practically, accompanied by an attempt at expression, both in words and in motor activity. This, too, is due to the constitution of the brain, which imperatively demands motor expression, especially in the young, as a condition to thinking itself, and hence to all brain development.

Moreover, in this federation of nerve termini the motor nerves seem to dominate. If they are or become inert, the brain loses its other activities and dies. The child born without motor power is always an idiot. His earliest means of expressing himself being lacking, he never arrives at the later ones. He never has any conscious self to express.

Motor Activity and the Defective. — On the other hand, a child almost idiotic, but with enough motor power to utilize for educational purposes, by a carefully ordered system of motor expressive activities, may be raised from the plane of the hopelessly defective into that of the fairly intelligent and intellectually capable. Indeed, the training of the motor activities is the main reliance of all those institutions for the feeble-minded that have rescued from mental darkness and economic helplessness so many thousands of the "Born Shorts." And this is all made possible by that marvelous clearing house of nerve activities in the brain. Truly a force so mighty for good should not be ignored in the training of the normal child. Nature utilizes it first and chiefly in her development of the infant. All people everywhere in all ages have put their reliance upon it for the development of the young, — all but the schoolmaster. We, the professional teachers of youth, in all ages and peoples, have inclined to limit our training of the young to that which can

be obtained through some form of logomachy, the utterance and arrangement of words. But fortunately, Nature has kept right on working in spite of us.

Of recent years there has been much evidence of a return to the ways of Nature. It is manifested in manual training courses, manual training schools, trade and industrial schools of various sorts, systematic physical culture, and occasionally a rational and scientific coördination of developmental motor activities with other means of rousing and expressing thought, as a fundamental part of the educational scheme. But such coördination is as yet sporadic and unusual.

Lack of Coördination. — In most schools the motor exercises constitute an uncoördinated and seldom understood addendum to an already crowded curriculum. While few teachers nowadays have the courage to say that they do not believe in manual training, few have a really clear notion of what it is for. The most vibrate between its industrial and occupational values and what they call its "educational" usefulness, insisting, however, with the blind certainty of instinct, that the educational use is the real one. These values, however, are put forward as excuses rather than as imperative reasons.

The industrial reason is valid and powerful and does not need to be advanced apologetically. That manual training exercises make it easier for the average child to find himself and his place and to make a better living, because he does something worth more to the world than would be possible without such training, is a perfectly proper argument which does not need to blush for its own existence, and is in itself a quite sufficient ground for all the manual training now in the schools and more.

Meaning of "Educational." — But the educational value is not so easily understood. The very term *educational* is conveniently indefinable. Hence it is a handy covering for a multitude of sins and idiosyncrasies in teaching. It is the universal shield of the ignorant and hard-pressed. When the father says, "I don't want John to study music. It ain't practical," all the teacher has to do is to look wise and say, "Of course, Mr. Smith, it may not be very practical, but it's very educational," and she has Mr. Smith down and out. "Educational" is a great word. To the teacher it is both shibboleth and conjure word. It is as effective as Sydney Smith's "rectangular parallelopipedon" with which he silenced the old woman calling him names.

Now, of course, all motor activities that deserve a place in school are educational and that is the chief reason for having them there. They are educational as all the natural activities of life, especially those with a definite motive, are educational. They enable the developing soul to express itself and by that act to grow. This is simple, psychological, and plain. We grow through expression. Impression, learning, gives us the material, but it's expression, putting forth, exercise, — call it what you will, — that works the external fact into knowledge, an internal condition of growth, and also makes room and creates the demand for more and more material. We might as well try to make flour by pouring wheat into a motionless hopper as to make mind by pouring facts into an expressionless child.

Hence if we are to get the real value of motor activities, they must not be tacked on the week's work in school as an extra, placed there by sufferance, but they must be a

coördinated and fundamental part of the regular work, as really so as is language expression.

To make for real comprehension of the content subjects of the curriculum, such as history, geography, arithmetic, and to secure the highest and most permanent results from them, expression through motor activities must be secured regularly and systematically.

If you doubt this and have never tried it, do so as an experiment. Be honest with yourself and open minded about it. First think why it is so or may be so. The thing you have made you understand. The muddy notions too often left by words are all made clear when with brush or pencil, or other tools, you have realized your idea. With a child this is doubly true. The thing he has made even crudely is the thing he knows. This is the philosophy of all the constructive work of the kindergarten and primary school. It is not necessary even that the thing made resemble very closely, to another's eye, the object supposed to be represented. To the child it is the thing. He sees it. His hands have made it. It may be a house, or a bridge, or a rainbow, made with kindergarten blocks; to the maker it stands for an idea, and the making of it has made that idea clear to him as words could not do. By that mysterious process of the conservation of energy through interchange, his expenditure of motor energy in construction has brought about a more active and efficient exercise of his brain, and while the world may not have benefited directly by his action, his own mind has been strengthened and enriched by the reaction. The child has learned, not by listening to a description in words, but by expressing through motor activities his embryonic idea. Through

this attempt at expression, his glimmering of an impression has become clear comprehension.

School Possibilities. — Is it possible to have in the ordinary school such a coördination of motor activities with the existing course of study as shall not add to the crowding, but rather shall furnish relief by supplying an essential connecting element that is clarifying, stimulating, developing, and harmonizing? Can we in our teaching of language, history, and geography and the other topics, make use of that marvelous unifying agency in the brain of which we have spoken?

My answer is, not only can it be done, but it is easy; it would simplify many now troublesome problems, and it requires no new machinery. Indeed, it makes it possible to lessen the amount of machinery in use. It requires simply a certain freedom from convention, the courage of our convictions, and common sense, the bringing into the schoolroom of some of the practical wisdom of the home and the playground.

The Language Lesson. — Language is perhaps more nearly than any other a central subject, and serves best as an illustration. The teaching of language has a lower and a higher function, indeed several of them. The lower function is to acquaint the children with the rules of conventionally correct speech. The higher include truthfulness, clearness, and fluency of speech, and, what is even greater, the same qualities of thought. The lower function is the one most in the minds of teachers. The method is by rule and example. That the method usually fails to secure the result aimed at is not my present point; I am more concerned with the higher aims of the subject.

If the higher ends of language instruction are looked after, — the stimulation of good thinking and its clear, forceful, accurate, and fluent expression, — the habit of conventionally correct speech may be formed easily through such expression.

If the lower end only is looked after in the usual way, not only will the higher ends perforce suffer neglect, but the lower end itself, the habit of conventionally correct speech, will fail of attainment.

It is evident that clear thinking is necessary to efficient expression. Aside from a merely verbal knowledge of the conventions of speech, it is absolutely impossible to secure good language results without at the same time securing good thinking. The two are inseparable. Here is the occasion for a rational use of the motor activities. Here the teachers may utilize their extraordinary power to clarify thought and may make manual training a real educational force in daily school work. Suppose you are a primary teacher and are to have an oral lesson in which you want the children to talk fluently and well, thus acquiring correct language habits. You choose the story of Joseph. You first try to give the pupils the proper stock of knowledge, the necessary mental picture. You talk to them, you tell them the story, you describe the life of the nomad in the wilderness, and later the life at the Egyptian court. You paint word pictures of Asiatic and Egyptian scenery. Perhaps if the children are old enough, you have them read in books about it all. You carry on the study through a series of lessons. But you never know what the words used mean to the children. Your description of Oriental life may produce such responses as that of the boy who, after learning a

definition of the equator, described it as a " menagerie lion, running around the middle of the world." How can you make sure? Use the motor activities. Let the children represent Joseph in his various environments in some tangible material. It makes little difference how crude and simple the material is. A long table in each primary schoolroom is almost essential to clear mental pictures and good language. It is better that the table be what is usually called a " sand table," and it should contain slightly moistened sand for manipulation.

The children will supply gladly all the articles necessary, such as dolls and other toys, or better, objects made directly by hand from clay or wood or paper, — and working as you tell the story, from day to day, they will at the end have a panorama marvelous in its inclusiveness, but a source of very great pleasure to them and a stimulant to thought and its expression. They will then have no vague ideas about the story. The mental picture will be clean-cut and definite, and they will talk both fluently and well. Their brains will have received great stimulation. The language founts will be very near. The words used by the teacher in telling the story will be ineffaceably impressed upon the mind and will be used by the children.

I have seen third-grade children of foreign extraction talk from a sand table on the story of Beowulf a half hour at a stretch each, in good English and with absorbing interest, and the use of the motor activities made it possible.

The same principle applies to history, to geography, to arithmetic, to all subjects capable of illustration by the pupils.

It is perhaps easier to employ such illustrative ex-

ercises in the primary grades, where there is comparatively little differentiation of subject, but a little care will find means for the use of this great principle in all grades.

Arithmetic. — In arithmetic the opportunities are many. Practically all the work in denominate numbers, and especially in mensuration, can be greatly simplified and strengthened by suitable motor exercises.

I recall a visit to the School of Education of the University of Chicago when Colonel Parker was its head. That great teacher understood and utilized the place of motor expression in clarifying thought. The arithmetic classes were building a playhouse on the school ground. All the operations were carried on by the children. They bought the lumber and other material, at least theoretically, cut, sawed, fitted the parts, and literally built the house. The work called also for a very considerable practical knowledge of financial transactions, and it is safe to say that that knowledge was real rather than verbal. Those facts of mensuration and finance were sawed, hammered, and planed into the children's minds by their own activities, and could not be forgotten.

Geometry. — As I recall, my attention was first directed to this principle years ago in one of the earliest and best of the now numerous manual training high schools. Because of its newness the progress of its pupils was carefully watched in comparison with that of pupils in the old high school pursuing the same subjects. It was found that in mathematics they easily far outstripped the academic pupils. This was especially true in geometry. The reason was manifest. They were

dealing with geometric problems in the concrete, employing motor activities. So that it required no effort on their part to see the relations of geometrical magnitudes, because they had not only felt them, they had worked them out and produced them with their hands.

Physical Culture. — There is another form of motor expression possessing great possibilities which have been thus far quite generally overlooked. I refer to what is popularly called "physical culture." It has been common for years for pupils in schools to be put through various calisthenic exercises, to relieve the tedium of long sitting, to discharge overcrowded nerve centers, and in general to accord with the dictum that exercise is "good for" the children. These are sound reasons, and the exercises have served, no doubt, a very useful purpose. But they have fallen very far short of their legitimate function of giving effective and graceful expression to thought and feeling. Like manual training, physical culture has been tacked on the course of study as an extra instead of being coördinated with it as both a stimulant and a means of expressing thought. In a few progressive schools and systems of schools attempts have been made at a proper coördination of physical culture with the other studies, with remarkable results. The work done in the Teachers College, Columbia University, that by Miss Belle R. Parsons in Los Angeles, and that by Miss M. B. Newton in Rochester, N.Y., show what may be accomplished with little extra effort.

Gesture, the Earliest Language. — And why not? Gesture is the earliest of languages. There are few emotions or thoughts that may not be expressed in gesture. Few people can talk at all without gesture.

The natural gestures of the baby are accurate as well as graceful. Anger, love, hunger, joy, content, are all plainly manifested without the utterance of a word.

Pantomime and Drama. — Under proper instruction, this use of the body to express thought has received a very high development among specialists. The pantomime is merely organized gesture. We have the highest development of gesture in the drama, where it is coordinated with expression in words, and in the opera, where it is allied with vocal and instrumental music to express the deepest and the loftiest emotions.

All these phases of motor expression in simplified form may be used with propriety in the schools. Dances representing national customs in connection with history, games of all sorts dear to the young, movements representing in rhythmic pantomime the various industries of men, *tableaux vivants*, showing modes of motion in nature, as the undulatory movements of the sea and the air, the flowing of water, the waving of trees and of fields of grain, the locomotion of beasts, the flight of birds, and many more, introduced into school, will illumine the various subjects of the curriculum and afford a useful outlet for the child's natural love of self-expression, besides furnishing good exercise.

The Drama in School. — One of the best exercises in connection with the study of history, of language, and of literature is the drama. Plays made and acted by the pupils, representing the stories they read, the events of history, the activities that they describe in words, so clarify impression as to render the facts learned unforgetable, while giving the children the advantage of expressing themselves in the most complete manner possible.

Instances could be multiplied without number, showing how the motor activities may be employed in school, not as extra exercises, burdening both teacher and pupils with a new subject, but rather, illumining and reënforcing the standard subjects now in the curriculum and at the same time bringing joy and freedom into the daily tasks and changing drudgery into alluring and fascinating employment.

Reform Needed. — Our entire scheme of manual training and physical culture must be recast along the lines of the expression of thought and feeling. Manual training has made long strides in that direction already. The meaningless exercise of the early day is rapidly disappearing, and pupils make things for a purpose, to express some thought or feeling. But this thought or feeling is too often artificial, worked up for the occasion, to give excuse for the exercise, instead of being a vital idea forcibly demanding utterance.

Physical culture has not yet moved clearly in the direction of common sense, except in here and there a school. The exercises are still exercises merely, sawing the unresisting air or contorting the body into ungraceful shapes with no manifest motive beyond that of mere exercise.

But the time is coming when manual training will be a regular part of the thought-developing and thought-expressing machinery of the common school, when every exercise will be an aid to the solution of a pressing school problem, when the children will express their ideas as naturally with saw or plane or hammer, or pencil, or brush, or chisel, operating on solid material, as with the glib tongue uttering articulated breath or with the pen making symbols on a white plane.

And physical culture will be the expression in graceful, symbolic movements of genuine thought and feeling, the gesture developed to include countless expressive movements, the dance representing in graceful symbolism the rhythmical movements of nature, — air, ocean, trees, and streams, — and of the animals, and also the activities and industries of man; and last and highest of all, the drama, and these not treated as separate exercises but as drawn from and related to the life and education of the child, clarifying and illumining the dark places of the school.

CHAPTER XXIII

Industrial Training

Motor activities as applied to the work of the school fall naturally into two classes, the educational and the industrial. These names are, however, inexact and to a degree misleading, inasmuch as all activity, especially all school activity, is educational. Moreover, there is no fundamental reason why training for manual industry should not be educational in the broadest sense.

Industrial Training also Cultural. — The old type of training, supposed to be to the fullest degree cultural, — that obtained through the study of the humanities, — had for its aim one of a very small number of definite gainful occupations, law, theology, or medicine. True, they were not manual activities, but that does not affect the principle. For training for a manual occupation properly conducted is mind training and to be most effective must include a very wide culture. Manual dexterity is only a minor result of the best manual training, even when directed toward a specific occupation. The trained mind is as necessary to the highest success in wood working or iron working as in surgery. So industrial training to be highly effective must be chiefly cultural. Indeed, one of the strongest arguments for the right kind of industrial training, though one frequently overlooked, is that it lifts the hand worker from the

plane of the mere mechanic to that of the thinker, using his trained mind, to get better mechanical results, it is true, but also able to use it to meet the broader demands of life. It produces not merely better mechanics, but better men. In a free state the man before the machine is as important as in war the man behind the gun.

Distinction Inevitable. — Still in our planning for training the motor activities in school, we do necessarily make a distinction as to the aim. There is a marked difference between what in school parlance we call "manual training" and what we call "industrial training."

The former aims definitely at broad general culture, the hand work being merely one of the means employed to that end, and the relation of the training to specific gainful occupations being merely incidental. Whereas in industrial training the specific calling is definitely to the fore, any cultural effect being the incident. In the former, hand training is to give the pupil new modes of self-expression, to enlarge his acquaintance with life, and to develop those areas of the brain that lie fallow unless stimulated into productivity through motor activity, and thus to make it easier for him to know his own aptitudes. It opens to him a larger world of possible work. In the latter the aim is specifically to train carpenters or blacksmiths or cooks or what not.

Industrial Training in America Late. — In America recognition of the importance of industrial training in schools arrived late, growing out of pressing industrial and social conditions, real or imaginary, such as the restrictions placed upon apprenticeship by the labor unions so that few native-born children can enter the

ranks of skilled manual labor, and the real or supposed filling of the ranks of the unemployed with boys and girls from the schools.

At first such training by the state was regarded with almost universal suspicion. Those of us who were active in introducing manual training into school twenty years or more ago were compelled to explain very carefully that it was not intended to fit children for trades, but that the aim was purely educational. We had to point out over and over again that we were merely giving the children a broader culture and to show that they did better in their other studies because of the stimulus received from work at the bench. Much was said of the dormant brain areas, to be awakened only through muscular activity. This was especially necessary when we tried to introduce manual training into the grade schools.

Sewing and Cooking first "Industrial" Subjects. — It was the introduction of sewing and cooking for girls that really paved the way for industrial training as such. Here it was necessary to lay greater stress upon the "practical" value of the instruction given, — how it made better housekeepers and better homes. Thus the minds of intelligent people, including boards of education, were prepared to accept the practical arguments in favor of teaching trades to boys.

The general value of teaching the various manual arts has perhaps already been sufficiently stated. It now remains to discuss industrial training specifically. And truly some things need to be said very plainly indeed.

Danger of Extremes. — We are so prone to rush to extremes. Sometimes I am tempted to think that we are

in danger of losing our sense of proportion, our sanity, over this question of industrial training. There are those among us who apparently would turn all our schools into shops, who would put the hand before the brain and would sacrifice all the results of the devoted labors of those who have built up our magnificent system of high schools offering to all boys and girls the blessing of a liberal culture.

The Age of Choice. — One of the chief dangers of this extreme course is that of forcing young boys and girls into the choice of their life work long before they are competent to make such choice. Even many college graduates have not yet found themselves and are uncertain as to what work they should choose. We can all recall the various stages that we passed through before arriving at our destination, and some of us doubtless are not now sure that that destination is the proper one.

Compelling children in the grammer school to make such choices is sure to increase the number of square pegs in round holes. It is not a variation of broad manual training, it is its antipode. Instead of helping the young to a knowledge of their aptitudes it closes the door of such opportunity to them.

Of course these extreme views are not held by the better thinkers, the real leaders of the movement; but there is enough of such talk abroad, some of it uttered by those high in educational authority, to demand caution and clear statement of purpose. No one must be allowed to think that the leaders of educational thought desire to substitute farm schools, or cooking schools, or millinery schools, or shops of any sort, for

high schools and colleges, even those of the most purely intellectual and scholarly type.

Danger to Democracy. — Above all, no one must believe that we aim to drive into private schools the children of the well-to-do or those who desire "book learning," leaving the public school for those who must learn trades. To do this would create those permanent class distinctions that would spell the death of democracy. And this is undoubtedly the goal to which some of the extreme advocates of industrial education would drive us.

Arguments not wholly Convincing. — Frankly, it must be said that the most urgent advocates of extensive industrial training as a coördinate branch of the common school curriculum have not made out as yet a completely convincing case. The assumptions are stronger than the proof. Indeed, thus far the plea rests almost wholly upon assumption. The latest official report upon the subject is a very able, careful, and on the whole conservative, document. I refer to the report for the year 1908 of the New York Department of Labor, prepared by Director Charles H. Richards, of Cooper Union. This shows that in a very large minority of the industries studied, there is difficulty in obtaining skilled labor, and that in the opinions of many, still a minority, courses of industrial training would help to remove this difficulty. This does not seem to be a very strong argument for making such courses a coördinate part of the work of the common schools, especially in view of other considerations naturally not included in the reports, but essential to a solution of the problem.

A recent national convention on industrial training

was practically a manufacturers' convention. With very slight exceptions the sole question discussed was the supply of skilled labor to the factories and shops. The question of the education of youth seemed scarcely to have occurred to the speakers.

The truths that there are more important things in life than skill in handicraft, that a skilled workman is not necessarily a good citizen, that the broadening and enriching of the mind is in itself so to be desired that official interference with it in the interest of mere manual efficiency would be deplorable, seem to have been overlooked. The speakers seemed to have considered but one side of the question. It is interesting that the chief advocate of liberal training for the pupils of the schools as contrasted with teaching trades was the representative of organized labor. He and those he represents are justly afraid of the enslaving effect of pushing children into trade guilds early, thus fixing permanently their social status.

All this means that there are two sides to the question. The efficiency to be obtained through careful training in one's chosen occupation is of course desirable. But to press this so far as to sacrifice breadth of mind and general intelligence would be disastrous. The man must always be larger than the workman. Some of the questions yet to be answered are the following:

How great, really, is the need of skilled labor beyond the present supply? Are the ranks of unskilled labor filled to any considerable degree with American boys and girls who would be in the ranks of the skilled if the common schools taught trades? Are clerical positions and those of salesmen and others, requiring sense and in-

telligence but not manual skill, overcrowded with boys and girls who would be better off as skilled manual laborers?

Is it possible to introduce trades into our schools without sacrificing other subjects? If not, what must go? Can it be shown that, in the long run, considering the pupils as future men and women and citizens, the students will be compensated for the loss of these studies by the knowledge of a trade? Just what is the place of the trade school in our system, as to the age of pupils, the length of the course, and the character of the instruction? What trades and how many should be offered? What is to be done for the girls?

I cannot of course assume to answer these questions. I am a mere layman, a somewhat old-fashioned teacher. But I shall venture a few suggestions.

The Proper Place. — What, then, is the proper place of industrial training in our public school system? At most it is that of an adjunct. Not one iota of the study of literature or history, or the fine arts, or any other purely cultural subject, must be sacrificed for it. To a certain extent it may be correlated with these studies, furnishing new activities, illustrations, and means of self-expression. Thus used, it may give point and direction to studies which before were somewhat vague and pointless. This is manifestly true of manual training. It is also true of nature study, mathematics, and history, and to a considerable degree of language study.

Suppose a boy is looking forward to the carpenter's trade; it is evident at once that his manual training exercises acquire a new meaning, his work with tools has a new and very potent motive. His nature study also,

while being no less cultural, acquires a new interest. The more he can learn about the woods and metals that enter into the work of a carpenter, the better his equipment for his future trade. Even his history, if properly studied as to its industrial phases, throws light both upon his work, and, especially, upon the social and economic life of the carpenter. Then, abundant material for language expression is to be found in descriptions of the tools and materials used by the carpenter, in exact accounts of processes, and in descriptions of articles made. This is incidental indeed, but it shows how the study of a trade may be given a cultural value.

But it cannot be repeated too often that the trade school proper must be an adjunct to the public school for general education, not a substitute for it or for any part of it. If trades are to be taught to pupils still in the common schools, it must be in additional classes, in the evenings, on Saturdays, or during the long vacations.

Continuation School. — But the ideal trade school is the " continuation school " for boys and girls who have fulfilled the legal requirements as to school attendance, and desire or are compelled to learn a trade. Such schools should be of two sorts; those employing the full time of the students who are able to postpone gainful work until they have first learned their chosen trades, and schools employing a part of the time of those already working for wages in shops.

The Full Time Schools. — The former require only the action of boards of education. They should, however, be not merely schools for teaching the details of trade, but should be as broadly cultural as possible. The cultural studies should be chosen because of their

manifest relations to the trade taught, and should be grouped around it as a center. They should shed all possible light upon its higher phases, and especially upon its social bearings; for example, nature study should be the study of those natural objects that enter directly or indirectly into the work of the craft, — their qualities, origin, production, and uses. The history should be largely centered about industrial and economic conditions.

The study of these subjects differs from the study of the same subjects for their cultural value in that it is the incident, while the trade itself is the ever evident aim. But it is none the less important and valuable. The pupils themselves should be led to see that such study will insure them higher success in their chosen work, that it will give them a wider outlook upon the conditions essential to the highest attainments, that it will make them more intelligent, larger, and wiser men and women, and hence better and more efficient carpenters, or blacksmiths, or cooks, or milliners.

The range of activities of a trade school should be as wide as possible. As many trades should be taught as can be taught effectively. Otherwise there will be danger of unhappy economic disturbances due to the overcrowding of certain fields of work. The tendency seems to be to limit the work offered to a few trades. This will have to be corrected, or we shall have a large army of the unemployed in certain lines, and a consequent shortage in others.

Avoid the Guild Notion. — But above all, every effort must be put forth to avoid the guild notion, for there is very real danger that trade schools, if generally organized

and largely attended, will have a tendency to increase the social differences of our citizens, and to fix them, producing permanent classes and castes.

One remedy for this is to intensify the cultural work of the trade schools. The larger the man or woman, the broader the outlook, the wider the sweep of purely intellectual attainments among manual workers, the less the danger of caste and social fixity. The great safeguard of a democracy is the social fluidity of its citizenship. The easy transition from one phase of life to another, the widest variation of occupation among members of the same families, particularly the choice of work by the children different from that pursued by the parent, save a nation from the prejudices which are the basis of all caste and class distinctions. This the democratic trade school must accentuate and develop to the fullest degree possible.

In this respect the problem before America is quite different from that in most European countries. Hence we must be careful in borrowing ideas from Germany, for example, where not only are permanent class distinctions prevalent, but where they are considered desirable by the ruling powers, and where their perpetuation is a distinct aim in public education.

Another caution that we must keep in mind is to avoid such training as will permanently limit the pupils' powers of expansion. They must be saved from the narrowing effect of doing one small thing day after day.

In this respect the trade school should have a distinct advantage over the apprentice system of learning trades. For the good trade schools teach all phases of a trade, and not merely a single one, while the tendency of the

employer is to keep the employee engaged upon a single operation easily learned. This makes men small, though perhaps very expert in the narrow range of activity open to them.

The Part Time School. — But not all boys and girls who are ready to choose a trade can stay in school long enough to learn one. Economic conditions compel them to go to work to earn money. Are these unfortunates to be compelled to forego all training for their chosen work except the narrow round of a single movement given in the shop by the employer eager to turn the young brain and hand into ready money?

For these youths special schools should be provided, giving them, for an hour or more a day, high-grade broad technical instruction in their chosen crafts, and these should be daylight schools, not evening schools, and employers of boys and girls of limited education should be compelled not only to grant the necessary time, but to see to it that their employees of suitable age go to these schools.

Some of the more enlightened manufacturers of the country maintain such schools at their own expense, notably the General Electric Company, under the now famous leadership of Mr. Alexander at Lynn, Mass. They find that the gain in power, in better comprehension of the principles underlying the craft, and hence the better work done, more than compensate for the cost of the school.

But this is properly the work of the public, quite as much as maintaining schools for the more fortunate youth who can give their entire time to education. Moreover, the single hour a day would do wonders,

because every problem would have a meaning, and its solution would be applied immediately to the work of the shop. Besides, it would affect the social life of the pupils only for the better. As they would have made their choice of work already, the schools would qualify them for the higher ranks in this work.

Training Farmers. — There is one phase of industrial training that is receiving much attention at the present time, which needs special consideration; that is training for farming. The importance of such training cannot be questioned. It has two motives, — to keep the boys and girls on the farms, and to secure better farming than is commonly found in this country. It is hoped, by showing the independence and the many other advantages of country life, to stem the tide of country youth toward the cities, and also to educate those who are to be farmers to a more scientific and profitable cultivation of the land.

To this end, in many states, instruction in the rural schools in the principles of agriculture is required by law. Also in some states township and county farm schools have been established, and elaborate colleges for teaching scientific farming have been appended to the state universities or created into separate institutions.

Rural Schools. — The farm schools and the agricultural colleges are undoubtedly admirable in purpose, and very useful. Teaching farming in the country district schools is of more doubtful value. The teachers in most of these schools are very young women. It is to be feared that the instruction given by them to farmer boys, even with the aid of good textbooks, will be either grotesque or humorous.

Proper Limitations. — Might it not be better to confine the work in the common rural schools to reading matter showing the charms of rural life, and the comparative independence of the farmer, and to nature study bearing especially upon farming, perhaps utilizing the school gardens, and by these means to persuade the boys and girls to attend agricultural schools? Is it not as true of training for farming as for the other industries that the trade school should be a continuation school, and that the elementary school should be devoted to giving a general education, with only such incidental reference to industries as will tend to create taste and enable the pupils to discover their aptitudes?

Industrial training seems destined to become a part of our public educational system. On the whole, it is to be regarded as desirable, but like all innovations it is in danger from its friends, and needs caution and wisdom to keep it in its proper place.

CHAPTER XXIV

The Fine Arts

SINGING

Are not the fine arts too fine for the common schools? Do they not belong to that army of fads that have been so vigorously and wittily and frequently denounced as corrupting our youth, turning the course of education into useless channels where it can turn no mill wheels of arithmetic or grammar?

Value of Fads. — Yes, truly they are fads; to the "practical" materialist, anathema, to all the Gradgrinds, maranatha. But how about the boy and girl who are to be the dominating forces in the free nation of the morrow? One is almost tempted to paraphrase and say, "Let me teach the fads to the rising generation and I care not who teaches them the 'essentials.'"

Let us remember that boys and girls in school are just people, not unlike those out of school. "If you prick us, do we not bleed?" They stand in the same need of ideals, of cultivated feelings, of illumination and inspiration, as their elders; and more, for they are more sensitive to influences, more easily turned toward materialism or idealism.

The fine arts are among the chief means of combating the much-preached-against tendency to low material aims. They are the principal reliance of the wise teacher

in training the feelings, cultivating that neglected area of the mind.

The feelings are the key to character, furnishing the solvent for the hard intellectuality of mere learning, and supplying the motive to the will. "Keep thine heart (feeling) with all diligence, for out of it are the issues of life."

If good character, showing itself in self-control for good ends and in a wise altruism, is the chief end of education, the feelings must be trained. Knowledge of good and evil is not enough. Adam and Eve acquired that through sinning — a marvelous parable. It is necessary to add to knowledge taste, a love for the good, the true, and the beautiful. No effort is wasted that brings into the lives of boys and girls a desire to taste the joys that come from the appreciative contemplation of this trinity of emotional appeal. Therefore let us have in the schools all the fads that may lift the eyes of the children "to the hills from whence cometh our help," even if arithmetic and formal grammar must move up a bit to make room for them.

Functions of Fine Arts. — The function of the fine arts in school is to open the minds of children to the higher meanings of life, to spread before them a feast of beauty and of joy that will keep their senses from noting with pleasure the vulgar, the coarse, the selfish, the evil of any sort, and will stimulate them to strive for attainment in the world of worthy ideals.

The fine arts that have found a place in our schools are literature, music, drawing, and painting; to a very limited degree, modeling and the finer aspects of the constructive crafts. Happily they have gained such

a foothold that we may safely assert that they have come to stay. Of these arts the one which, with the possible exception of literature, makes the widest appeal, is music. It would be supererogatory to descant on the influence of music in general. But its function in school and how that is to be fulfilled need discussion.

Two Aspects. — The two aspects of music that belong to education are producing music and appreciating music produced by others. Thus far in schools we have limited our efforts almost wholly to the former. We have undertaken to teach children to sing, it must be confessed with somewhat meager success. What may be accomplished in the other phase of music remains to be seen.

School not a Studio. — The very modest success of our efforts to teach children in school to sing must be attributed mainly to faulty method, itself due to a failure to grasp the difference between the schoolroom and the studio. Until quite recently the methods were wholly those of the music studio, and these methods still prevail to a very large extent.

In the studio a specially trained teacher of music teaches specially gifted pupils an art in which they already have particular interest. These pupils are willing to undergo the drudgery of thorough training in the elements of musical science, for ability to sing well is already a *desideratum* to them. Presumably they are already musical. They know something of music and they love it. Moreover, here, teaching music is the one aim, unembarrassed by other claims upon the time and attention. Even if there is any lack of interest on the part of the pupils, the zeal of the teacher and his cultivated skill

in teaching this particular art, to a very considerable degree, atone for this lack.

In the school the conditions are quite different. The teachers for the most part are untrained in this art, and few of them are in any true sense musical. They are compelled merely to follow the instruction of the supervisor, or the course of study, without much interest, and frequently without skill. Many of them are much more interested in arithmetic or grammar than in music.

The children too are of all sorts, children with no interest in music, those with a little interest, and those with great interest, all in one class to be taught together. They do not come to school to study music chiefly, or even as a very important matter. They would find no fault if not taught it at all. Some have considerable musical ability, some little, some are monotones. Under these conditions, De Retzke with Farrar as a pupil will not serve as a model. The approach must be psychological, rather than scientific. The limitations of the teacher, of the pupils, and of the curriculum, all require this.

Wherein have the prevailing methods been faulty? In two respects in particular, and these relate to the two especial aims in the teaching of music in school.

Appeal to Æsthetic Nature. — In order to realize through the teaching of singing the higher ends of education to which they are supposed to contribute, it is necessary, through a wholesome cultivation of the feelings, that children should come to love singing, to love music, and to know and love good music. The appeal should be made from the very first to the æsthetic nature. Hence the beginning should be song,

real song, such as the children can appreciate, but not vulgar or commonplace. The rhythm, the melody, the lilt, the echo of the heart beat, which are the physical basis of both poetry and music, should be strongly present in the first musical instruction, and they should never disappear. The mechanics of music, its scientific structure, should be kept in the background and should be brought forward only when the children are ready for it as explanation of that which already has given them pleasure and as a means to fuller joy in singing.

The familiar method of teaching singing to children by beginning with the scale is comparable to teaching reading by beginning with the alphabet or teaching drawing by beginning with a study of type forms, the sphere, the cube, and the cylinder, methods which all the older teachers will readily recall. To a degree they are all logical. They start with principles, and what method of teaching a principle is so simple as to state it "in good set terms"? But they are to even a greater degree unpsychological. They ignore the interest of the learner. They forget that children learn by contact with things, embodied principles, first, and later may come to understand and even to state the principles.

Begin with Songs. — Hence teaching singing in schools must begin with singing, singing real songs, enjoyable to the children in both sense and rhythm, appealing even to the unmusical children. It must first be rote singing, singing "by ear," until the songs are learned. Gradually a study of principles and even of technic may be introduced, after the children have been made ready by much enjoyable singing.

It is not the aim of this discussion to treat of method

in detail, but to indicate the principles on which all method must be based, if children are really to learn to sing.

It must be remembered that teaching singing in school is not merely or chiefly to give children a knowledge of the principles of the art. It is rather to introduce into the school life, and thence into the after life, a new element of joy. This involves cultivating not only a love for music, but a love for good music, appreciation, musical taste. This is the principal reason why the music used in instruction should be good music. Mere exercises, musical phrases composed to illustrate some principle of technic, will not do.

It is as great a sin to keep children, in the earlier period of learning to sing, drilling on meaningless mechanical phrases and scales, as it is to make the early reading lessons of meaningless combinations of letters or of words. The " do re me do " first lessons in singing are on the same plane with the " See the ox go up " first lessons in reading, or those even worse, in which sounds are put before sense.

In the one, as in the other, the emphasis should be upon the content from the very start. The cultivation of taste should move with equal step with learning the principles of the art. The earliest music used should appeal to the feelings, both for the joy it yields in the present, and for the fuller joy it may be expected to yield with growing taste. Music enriches chiefly the æsthetic side of life. Hence to the æsthetic nature it should appeal during the process of learning.

Moreover, the pupil should learn through his music lesson to appreciate the music of others. But this will be treated in a later chapter.

CHAPTER XXV

The Plastic and Graphic Arts

The same principles that apply to singing apply with equal force to drawing and painting and modeling. There are the same limitations of environment, of untrained or meagerly trained teachers, of pupils without previous preparation, without taste, without desire.

As with singing, the methods must be adapted to these conditions. The first efforts must be to represent truthfully real things which the children desire to represent. They must see from the first that they are getting possession of a new language, through which they may express the results of their observations and their feelings.

Create Appreciation. — Furthermore the lessons in drawing and painting and modeling must open their eyes to the meanings and the beauties of what others have done with these arts. The child who has not learned through his drawing lessons to enjoy the fine drawing of a great artist has missed one of the chief possible values of his lesson.

To this end good models of drawings of subjects similar to those he is to draw should be presented to the children. I am aware that this is heretical. We are told continually that the child must see for himself. Of course he must. But he must learn to see with the eyes of the artist, to distinguish the essential from the

unessential, and in particular to see the beauty of what he is trying to represent. Studying the work of a real artist will open the eyes of the student so that he can see more for himself.

Value of Copying. — There is much to be said for the old custom of requiring students of drawing and painting to copy the works of masters. I am aware that a suggestion of copying in school would meet with extreme disfavor in the eyes of drawing teachers and supervisors. Still I am rash enough to suggest it as a very valuable exercise. The great masters of English have generally acquired facility and style through copying the styles of admired masters. Stevenson, for example, confesses himself a copyist in his earlier attempts, changing his master repeatedly. The great painters have all either begun in that way or have supplemented their earlier attempts at self-expression by sedulous copying. How else is a style to be acquired? A student who carefully copies the works of a master learns to see as the master saw, and thus has his eyes opened to beauties before concealed. I am convinced that it would be an excellent exercise to introduce into the elementary drawing lessons as well as into those more advanced.

Copying Not All. — Of course, this is by no means the whole story. Constant copying would weaken originality. The pupil must learn to see with his own eyes the beauties of what he is to draw, and to select the salient features and group his objects so as to bring out these features. Therefore, after the close study, line by line, of some master's drawing or painting, such as is required for copying, he should attempt to draw simi-

lar objects and groups of objects, using what he has learned in his copying.

Drawing a Language. — The drawing lesson has another function also. It should not only feed the æsthetic nature of the child, but it also should give him a new language, a fresh medium through which he may express his thoughts. This he will acquire mainly through use, but also through studying the successful attempts of others to express their thoughts.

The young child begins crudely to represent what he sees, and these crude drawings are often very interesting. But the interest is mainly psychological rather than artistic. Through these untutored efforts we get insight into the workings of a child's mind. But if this kind of drawing is continued too long, there results retardation and a clogging of the mental machinery, — arrested development, — and here is where the child's drawing often breaks down. His work in the intermediate grades loses the freedom that it had in the primary school. He becomes self-conscious, ashamed of the crudity of his efforts, and, lacking the help that an elementary knowledge of technic would give him, loses his interest in drawing. Correct graphic expression can no more be evolved from his inner consciousness than correct language or music. Before he can use the art effectively, he must know something of its laws. These he should be led to discover in the work of one who has obeyed them. In other words, freedom may be carried so far as to destroy itself. There is first the freedom of infancy, untrammeled by any limitations except those of the child's own power. But very soon this must be succeeded by the freedom of law, the conscious power of one who knows how.

It must not be forgotten that the great aim of teaching any of the fine arts is to develop power to see and to reproduce beauty, and to this end it is necessary to understand, to a limited extent at least, the laws of beauty.

Too much of the drawing in schools is barren and mechanical, resulting either in a vain self-satisfaction or in a lack of interest.

Begin with Pictures.— The principles suggested for the teaching of music apply with equal force to drawing. As the former should begin with music, so this should begin with pictures, many pictures, good pictures. Naturally these pictures should be of a sort interesting to children. If possible they should be in color. It is much more important to have in a primary school a stock of good pictures than a set of drawing books or of type-form models. Photographs, copies in black and white and in sepia tints, and reproductions well done in color, are easily obtained and inexpensive. Among the best of the various classes of pictures available for schoolroom use are the large colored posters now offered by all school art dealers.

Must fit Children. — It is most important that the pictures used be of subjects adapted to children. Much good art, especially classic art, fails to excite interest in children. Well-meaning committees often err in this regard. Even classical madonnas generally do not appeal to children. Pictures of animals, of other children, of domestic scenes, preferably modern, are the most suitable for use in primary schools. Large pictures with only a few details are the best. These should be changed from time to time and should be studied, that

is, carefully observed, and the interesting features and such of the points of beauty as children can appreciate should be talked about. All this is preparing for the more technical study later. It is creating taste. It is the natural way of approaching the subject.

Much Drawing. — Along with this, of course, should be much drawing and painting by the children. At first this will be necessarily of the crude, psychological sort. But quite early a few principles may be taught by observation. Color work is best, — at first, — with large, generous effects, concealing the unsteadiness of little hands, and requiring chiefly arm movements. The sky line and a little of perspective may be easily taught.

The children's observations, at first undirected, become gradually more definite. Their reproductions grow accurate, truthful, and artistic through a gradual acquaintance with some of the essential laws of the art, obtained by studying pictures with constantly increasing closeness, and by drawing and painting what they themselves see.

CHAPTER XXVI

The Development of Taste

How is it possible in the ordinary public school to inculcate taste in the fine arts? As to literature, the question is a simple one, and has been sufficiently answered in the chapters on Reading and Nature Study. But how is it with music and the graphic and plastic arts?

The natural way of cultivating a taste for good music is to enable the learner to hear good music sung or produced by orchestras, or by performers upon single instruments. It is evident that it is possible only in rare instances to present in schools for the benefit of pupils either skilled singers or trained performers upon musical instruments, either single or in bands. Now and then in the larger cities in a very few cases this may be done, but these cases are so exceptional as to be negligible in any general consideration of the musical needs of children. Public concerts in parks sometimes offer real training in musical taste, and fortunately the custom of giving such concerts is growing. But the schools have no control over these offerings, and can have none. Moreover, they reach a comparatively small number. Can the schools do anything for the many children attending them?

Canned Music. — There seems to be but one way at present, and that is through the increased use of

"canned music." Phonographs and mechanical piano players have already attained a considerable popularity in schools, and it is to be hoped their use may be greatly extended. These instruments of various sorts have been so greatly improved that they really offer very excellent substitutes for the personal performer. In many cases they present good music in a very much better style than the best local talent, even if this could be secured. If every school owned a first-class phonograph, or a good piano-player, or both, children could hear enough good music really to develop musical taste.

In some instances, school boards are wise enough to provide such instruments, but in most cases, where they have been obtained for schools, it has been done through the efforts of teachers and pupils, aided occasionally by parents' clubs and other auxiliary organizations. It is an excellent thing to work for.

Good Music to Sing. — Aside from this device, almost the only reliance of those who would elevate the people's children through the aid of music is in the kind of music presented for their singing exercises. As was said in the preceding chapter, this should always be good music. Mere exercises, scales, runs, and all pseudo-music, should take a subordinate place, merely to train the ear and the voice and to give the ability to read music, after the children, through singing real music, have acquired some taste and a desire to know more of the art which already gives them pleasure. They should never precede such pleasurable singing, and should never supersede it. They should merely accompany it when necessary, in order to make it more pleasurable.

The "music books" filled with "made up" strains of

inferior grade, so common in our schools, should go to the scrap heap, and in their place should be books containing music, real music. For we must never forget that the real aim of teaching music in schools is the elevation of the feelings and the consequent enrichment of the moral nature, and the one essential to this end is music itself, fine music, in abundance, developing taste and an unquenchable appetite for more music.

As to drawing and painting and modeling, the situation is much more encouraging, or rather the facilities for cultivating taste are much more easily obtained.

Reproductions of good paintings and drawings and statues are abundant and inexpensive. A very small sum of money will equip a school with a portfolio of thoroughly satisfactory reproductions of the best of the world's paintings, and with a few plaster casts, for all instructional purposes as good as the originals. It should be the aim of every school to own such a treasury.

It is not enough to have a few good pictures hanging on the walls, though of course these should be present. There should also be the portfolio. And all these pictures should be studied sympathetically, not merely to get a story from them for the language lesson, but to find out why they are beautiful. This study should be a regular and necessary part of the drawing lesson. In some cases it might profitably precede an attempt to draw some similar subject, but in most it should be simply a study to find the beauty — a training in taste.

Feed the Soul through the Eyes. — When a child has completed a common school course, it is not enough for him to be able to draw simple objects fairly well. He should be able to tell a good picture from a bad one,

and why it is better, and he should love the good picture and despise the bad one. The Sunday comic supplement should excite his horror and detestation, as should some of the illustrations that do not illustrate, found in popular novels and magazines.

We do not pay enough attention to the feeding of children's souls through the eyes. We cannot wholly prevent the presentation to them of the base, the commonplace, the vulgar, even the indecent, in books and papers, and on public walls. But we might to a degree at least render them immune to these degrading sights by cultivating a distaste for bad art, through its antipode, a love for good art. Here is where stress should be laid in the art departments of our schools.

It is possible, if the schools should seriously undertake to cultivate taste in the children, that, in time, our civilization would be so far removed from barbarism that popular sentiment would demand the entire abolishment of bill boards. But that may be an iridescent dream.

CHAPTER XXVII

The Correlation of Studies

Thus far we have discussed the values of the different subjects of the school curriculum considered separately, and have endeavored to intimate distinctly some ways by which these values might be secured to the students. But this is by no means the whole story of education through study. In a higher sense no subject can be considered independently.

The Mind One. — The mind is one. It does not consist even of separate "faculties," as taught in the older psychology. These so-called faculties are but various activities of the mind. Even memory is composite and contains elements of reason, of feeling, and even of willing. It cannot be cultivated at all without calling into service these elements. If this is true of the mind itself, it is especially true of the various means and materials that are employed in education.

Knowledge of Relation. — Nothing can be known alone. All knowledge is of relations. As the various foods are taken into the body and there cease to be meat, potatoes, bread, and become "one body," essentially different from any one of them, so all knowledge is a fusion of many elements, which have lost to a considerable degree their original characteristics.

What we choose to call arithmetic, grammar, and read-

ing, when used in education, are but foods of the mind, which lose their identity when absorbed, and become simply undistinguishable elements of mind stuff. The only knowledge, again, is correlated knowledge. However diligently we may teach disparate subjects, when they become subjective knowledge, they have been by some mysterious process of mental alchemy fused into the mind itself, so that they are all present in the activities of any one.

We talk of abstract number, which means merely number not applied to a particular object. But numbering, a mental act, cannot be abstracted from reason, from memory, from symbolizing, from a hundred other mental actvities. The Hegelians have much to say of their categories, and do not recognize a truth until it is categoried. This is a rather technical and materialistic way of stating a fundamental truth. Knowledge does not exist, as such, until it has found its place among the previously possessed knowledges and has become a distinct part of them, almost or quite unrecognizable under its own name.

Knowledge Individual. — To put it, possibly, in a more plain and practical way, both the thing learned and the learning mind are modified by the act of learning. This is apperception. No two people can know exactly the same thing. The mind can know only what it is fitted to know by reason of its previous content and mode of action. Dr. Holmes wittily expresses this in the "Autocrat of the Breakfast Table" thus: "It is not easy, at the best, for two persons talking together to make the most of each other's thoughts, there are so many of them. When John and Thomas, for in-

stance, are talking together, it is natural enough that among the six there should be more or less confusion and misapprehension.

"As I said, I think I can make it plain to Benjamin Franklin here, that there are at least six personalities distinctly to be recognized as taking part in that dialogue between John and Thomas.

THREE JOHNS.
1. The real John; known only to his Maker.
2. John's ideal John; never the real one, and often very unlike him.
3. Thomas's ideal John; never the real John, nor John's John, but often very unlike either.

THREE THOMASES.
1. The real Thomas.
2. Thomas's ideal Thomas.
3. John's ideal Thomas.

"Only one of the three Johns is taxed; only one can be weighed on a platform balance; but the other two are just as important in the conversation. Let us suppose the real John to be old, dull, and ill-looking. But as the Higher Powers have not conferred on men the gift of seeing themselves in the true light, John very possibly conceives himself to be youthful, witty, and fascinating, and talks from the point of view of this ideal. Thomas, again, believes him to be an artful rogue, we will say; therefore he is, so far as Thomas's attitude in the conversation is concerned, an artful rogue, though really simple and stupid. The same conditions apply to the three Thomases. It follows that, until a man can be found who knows himself as his Maker knows him, or who sees himself as others see him, there must be at least six persons engaged in every dialogue between two.

Of these, the least important, philosophically speaking, is the one that we have called the real person. No wonder two disputants often get angry, when there are six of them talking and listening all at the same time."

To a child riding on a locomotive with his father, a red light is only a red light, while to the father it is a signal of danger or even of death.

To Wordsworth's Matthew,

> "A primrose by the river's brim,
> A simple primrose was to him,
> And it was nothing more."

While to the poet himself,

> "The meanest flower that grows can give
> Thoughts that do often lie too deep for tears."

In more practical fields, — A general term such as a *trapezoid* to the mathematician brings at once a perfect image of the geometric figure, while to a child in a primary school, studying an old-fashioned arithmetic, it means — nothing.

Topics Composite. — The various topics named in a course of study are all composite. No one represents a single line of mental activity, or a single exactly segregated body of knowledge. Each is merely a convenient conventional grouping of more or less closely related bodies of facts. Some subjects, such as geography, are confessedly agglomerations of many sciences, very loosely coördinated. Others, as arithmetic, are assemblages of knowledge associated by a single common factor, as number, — like buttons on a string. A few, like spelling, represent more nearly a single field, but a very narrow

one. History and the fine arts stand for a more substantial, because a more philosophical, unity. But to treat any topic of the curriculum as if it stood alone in the field of facts as a plainly distinct entity, is to pervert the truth and to place obstacles in the way of the natural correlation which goes on in the mind whenever anything is learned.

The Practical Aspect. — The practical aspect of these truths to the teacher is this: Since all facts learned must be fused in the mind with other facts known, that is, with the mind itself, it behooves the teacher to present them to pupils so that they may be fused readily. There is enormous waste in the ordinary way of teaching subjects without special regard to their relations. Textbooks too frequently have an eye single to the topic named in the title, and endeavor to separate it from all other topics however naturally related, and to treat it as an abstract, unrelated entity, so that the child and even the teacher have little notion of the essential oneness of the curriculum.

It is true that in the intensive study appropriate for university specialists such abstraction is desirable and even necessary. The subject being already well known in its larger aspects and in its broad relations, becomes the proper subject for minute investigation as to its own essential qualities. But the children in elementary schools have no such general knowledge. Even the simplest relations have yet to be made plain to them. They are quite too willing to treat learning as a task for the memory. So they learn the rule and the definition and the isolated fact, in order that they may recite them glibly to the teacher, with never a dream that they con-

ceal vital truths which would help to explain the infinite complexity of environing life.

Unless arithmetic makes clear to some degree the numerical and dimensional characteristics of the world, the time devoted to it is largely wasted. It would be wholly so, if it were not for the truth that the mind itself, in spite of the textbook and the teacher, does a vast amount of coördinating and finds meanings in statements in themselves meaningless, as set forth in the lesson.

The language lesson is too often the study of rules and forms arbitrarily given, which have no more effect upon the speech of the child than the wind that blows. This is particularly true of those elementary language lessons that feed the children desiccated grammar, the husks and chaff of language.

Geography perhaps more commonly than any other school topic to the children is a meaningless and lifeless study, " the study of dots and lines on colored pieces of paper," as Colonel Parker used to call it.

Though of late years much more has been done to vitalize teaching and learning, still our schools are very far from making knowledge real to the children by placing it in its proper and natural relations, and thus rendering the process of fusion easy.

It is no uncommon thing for children to be studying the history of England, the geography of Africa, the natural phenomena of Minnesota, all on the same day, while at the same time memorizing the rules of grammar applied to nothing, and talking ungrammatically of the subjects named, and learning to write " Honesty is the best policy," and to spell *hautboy*, *pneumatics*, and *in-*

compatibility, the last-named word having indeed a general application to the various ingredients of the educational hodgepodge. While in its absurdity this picture may be extreme, a glance at almost any course of study will discover fairly close approximations to it.

Waste. — Perhaps the worst feature of the prevailing plan is its awful waste of time and energy. The cry that we try to teach too many things in school is certainly true if they are taught as so many irreconcilable lists of things to be " stored away " in the mind.

The Remedy. — The remedy for the overcrowded curriculum is to be sought, at least partially, in a closer coördination of the now heterogeneous topics. History and geography need to be joined in wedlock. Nature study should be adopted into the family. Language should be taught as one means of expressing ideas on the other subjects studied, drawing as another. Perhaps language study comes nearer to being a universal solvent than any other single topic, because of its manifest function as the universal means of expression.

No Topic Dominant. — But no single topic can be made the center of a course of study, for no one is dominant or naturally central. The various attempts of a few years back to " concentrate " the course of study about a single topic, or two or three topics, met with foredoomed failure, and brought the whole subject of the correlation of studies into disrepute.

There is no mechanical device of arrangement that will meet all cases, because learning is a vital process; the necessary fusion goes on in and with the mind. The learning child is the necessary center of all correlation. About him and his individual needs and aptitudes the

subjects must be grouped so that he may fuse them unconsciously, much as he digests his food. But still he may be greatly aided by a careful selection and arrangement of the topics in the course of study and especially in the daily program.

It is for the officials who make the course of study and for the teachers who administer it to watch continually for points of contact, to illumine each topic presented by reference to allied topics, to see, in short, that truths, and not mere isolated facts, are presented as food to the growing minds of children.

An Important Distinction. — One distinction is important, and, if carefully observed, will do much toward making knowledge real, and consequently toward the prevention of scattering and the elimination of waste, — and that is the distinction between content and form, between fundamental vital knowledge and the various minor arts by which such knowledge is acquired and expressed.

If language is always treated as the study of thought; if reading is always taught as a means of getting ideas; if arithmetic is always made to explain some important truth in the physical universe, or in the relations of man to man; if through these arts the children are given insight into physics, commerce, history, literature, human society, then the arts become worth while, and then also the distracting number of disparate topics in the school program will be found to dwindle naturally.

The nearer we can approach in our teaching to a realization of the unity of knowledge, without running into artificial absurdities of correlation, the more time we shall find to " teach the essentials," and the essentials will then be truly essential, because they will be vital.

CHAPTER XXVIII

Efficiency of the Course of Study

Not only by correlation is it possible to make room for the many desirable subjects that, it is claimed, now overcrowd the course of study. Equally essential is higher efficiency of administration, through a better adjustment of studies to the pupil's mental status, and through the avoidance of useless repetition. This question has not been sufficiently discussed by students of education.

Supposing the prevalent course of study in our elementary schools to rest upon sound bases, psychological, social, and philosophical, the question remains: Is it efficient? Is it so adjusted to the psychological and social needs of the individual pupils as to render adequate returns for the efforts expended?

This is too large a question to be discussed in a simple brief chapter. Indeed, it can be answered fully only by such a searching investigation as no one has yet undertaken. It is to be hoped that at some time such an examination will be undertaken either by one of the various endowed institutions of research, or better, by the United States Bureau of Education.

A Source of Waste.—I must, however, though briefly, call attention to one manifest and serious source of waste in the general administration of the course of study, to

which I have already referred, the prodigal waste of time through useless repetition.

Several subjects, whose function is chiefly informational, are taken up in the primary schools in simple form and then repeated in the intermediate and grammar schools in somewhat fuller detail and in different language. In some cases even these modifications either are lacking or are very slight. Some subjects, such as reading and the correct use of language, are so naturally progressive that no such repetition is possible. But with the other subjects this is not the case.

Geography. — Geography, for example, is usually taught from a "two-book series." In the primary book information is given in more or less simple language about the earth as a whole, about geographic phenomena, such as day and night, the planetary system, the succession of months and of seasons; geographic forms, as hills, valleys, continents, oceans, plains, and the rest; geographic causes, such as erosion, winds, glaciers; and about the political divisions of the earth as shown on maps. Beginning with about the fifth grade the higher book is taken, in which these facts are repeated in somewhat different language and in greater detail, but without great difference or improvement. Much of the information given in the primary book is of no great interest or value to the children pursuing it. The facts are memorized, — or not, as may be, — but not in any true sense comprehended. The subject is usually disliked, and hence a distaste for it is created which is sure to militate against the best results in the higher grades.

There is no special reason why a child should attempt to learn or, still less, to comprehend the greater part of

the facts given in the ordinary primary geography at the time they are studied. The time and effort expended upon them are largely wasted or worse. They might much better be devoted to the direct study of environment, such as nature and human industries, to manual training, and to other " fads."

Geography is now commonly studied during five or six consecutive years, with no better results at the end than would follow two years' study at the right time, when the minds of the children are mature enough to grasp its principles.

A one-book geography, taken up say at the beginning of the sixth year, would find the students ready. They would have sufficient knowledge of manifest environing geographic conditions to stimulate curiosity, and maturity of mind enough to pursue the subject intelligently and swiftly. All the increment of power that comes with the development of the subject, with interest, and with ability to think consecutively, — the natural and proper results of a wise primary training, — would make it possible to learn more in one or two years than is now learned in six. Any one who has listened to the parrot-like repetition by primary children of " Montpelier on the Onion," of " The principal industries are manufacturing, agriculture, grazing, and mining," must have been first amused and then saddened at the thought of the precious years frittered away.

It is simply traditional that, geography being a useful study, its facts must be crammed into infant minds. If in its formal presentation it could be entirely cut out of our primary schools, think of the time and energy that would be set free for the really essential things, and

there would be, not loss, but actual gain, for geography itself.

This does not mean that there should be no consideration in primary schools of any of the facts that enter into that assemblage of miscellanies called geography, but merely that there should be no formal textbook study of it, and that the study should be limited to such phenomena as come naturally within the observation of the children. It should be, in other words, nature study, and at first hand. Through "nature study lessons," used, it may be, as subject matter for language lessons, enough knowledge could be obtained both to satisfy the present need and to provide the necessary apperception centers for the later serious study of the geography textbook.

Beyond question much of the slow progress of children in primary schools, especially noticeable as contrasted with their rapid growth before coming to school, is due to the maladaptation to infant digestion of the pabulum offered. We are unwilling to wait for minds to grow, but must stuff them, as geese are stuffed to produce the diseased livers desired of epicures.

Nor does geography stand alone in this indictment. Grammar is almost as great a sinner against childhood and its proper education. The grammar taught to infant minds, even if predigested in a pseudo "language book," is even more worthless to the children than the contents of a primary geography. It has nothing to do with their speech or with their writing of English at this stage. It is a mere intruder and time waster. If all the time devoted to it below the seventh grade, — I had almost said below the high school, — could be given to

securing habits of correct speech and to constructive English, including the gathering and assorting of material to write about, and if then the student could come to it, when mature enough, fresh and eager for the reasons for what he had learned to do, a single year would suffice to cover all the ground necessary for any intelligent man or woman, not professionally a scholar, or "literary person."

The slow progress, the discouragement, the dislike, — almost universal as they are, — are due to the attempt to teach a metaphysical subject during the time when the child's whole interest is in the material and social worlds.

Knowledge of the metaphysical nature of a sentence is not an imperative demand of either the mind or society that needs to be thrust upon the infant in formulæ, whether understood or not. To teach it in the third grade and again in the eighth is not merely to waste the time of child and teacher, it tends to deaden the child's mind, destroy his interest, and pervert his view of school.

Arithmetic. — But possibly the greatest waste of time through useless repetition is in arithmetic, — Arithmetic! the "solid" American's Bible, the foundation of our fortunes, our virtues, our civilization, without which we should have neither financier nor embezzler — can it be possible to have too much of it? Let us see.

In most schools a textbook in Arithmetic is taken up in the third grade, — in some, even earlier. From that time it is pursued unremittingly, relentlessly, till the bitter end. Six continuous years at the least, and during all of that time it is the major subject. Does it pay?

If children had no textbook in arithmetic before the

fifth year and then studied it, for no longer time each day than is now given to it, for two years, at the end of that time they would know as much of the subject as they do now at the end of the elementary school course. Necessarily a certain study of number would come into the school life in all its years as it does into the life outside of school, but the formal study of arithmetical principles does not necessarily come into either life at this age.

Every good kindergarten teaches number, every contact with the world teaches number. Counting, and making the simple additions and subtractions that life, in school and out, require, are acquired naturally and almost unconsciously. A young child has no use for elaborate notation or for large numbers. To try to teach him the reasons for " carrying " and " borrowing " in addition and subtraction is to dull his perception with words, and this is true in most cases even when simple and logical methods are employed. The only possible way of giving him even a glimmering of the truth is by some form of muscular effort such as is mentioned in Chapter XI of this book. But even that had better be deferred for several years, until the pupil is mentally ready for it and curious about it.

If all the number work in the primary school were informal and incidental, — " not accidental "; that is, the grasping of the very few number facts that are needed to secure the child's adjustment to his environment, not only would he actually know more arithmetic at the end of the primary school than he does now, but his further progress in the grammar school would be unimpeded by baleful memories of earlier discouragements and agonies.

It is not necessary to elaborate upon other subjects. One of the most popular *physiology* texts for elementary schools, a two-book series, repeats the greater part of the first book in the second, *verbatim et literatim.* Imagine the enthusiasm of a child coming upon the familiar matter in his grammar-school text.

Books but Interpret Life. — Let us not forget that "book-learning" at best is but the interpretation of life, in words, and often is not even that, but is a mere memorizing of words divorced from ideas; that a knowledge of life must therefore precede a study of books, and that the wider this knowledge the larger the value of the books; that children are first naturally interested in the environing world; and we shall then begin to see the proper order of elementary studies.

While Rousseau's doctrine had many absurdities, it had also a foundation of truth. Nature, social and material, *is* the child's first school. Let him attend it and get all he can from it. Let us reserve adult studies and adult processes for adult minds. Let us not force them upon infant minds even in predigested form, but let us give the little ones what they need, and thus prepare them for the more difficult problems which will be presented in due time.

If our course of study could be adjusted so that during the earlier years the children were occupied chiefly with activities, observations, and adjustments; acquiring a practical, though fragmentary, knowledge of the world and its arts; gaining power by exercise, physical, intellectual, moral; learning to read and acquiring love for good reading, learning to use good English in oral and written speech, learning to think about things as they

occur, learning to do things that should be done, learning to make useful articles, learning, in short, to live satisfactory *children's* lives, and then, when a little older and more mature, could take up seriously the subjects that must be studied from books, — if this revolution could be wrought in our educational adjustment, it would work a revolution equally startling in the effectiveness of our schools, in training wise, well equipped, well informed, skillful, intelligent, and competent citizens, with a zealous desire for further education throughout life.

CHAPTER XXIX

Moral Training

The Need Recognized. — There is a very general demand that the schools do more than they have done for the moral training of pupils. The demand is as vague as it is general. The one hopeful feature is the evidence that people appreciate the need. However unwillingly, they are compelled to admit that the agencies heretofore depended upon to train the young in the principles and practice of good conduct are not sufficient for present-day conditions. The chief of those agencies are the home and the church.

One of the unhappy social tendencies of this age of quick changes appears to be away from the old-fashioned home, as the center and source of ideals and inspiration. Many of those who in former times would have been homemakers have other more absorbing aims. The conditions of life in large cities, especially among the poor, in many instances render the secluded, self-centered home impossible. Very large numbers of future citizens necessarily spend their childhood and youth without the sheltering care, the blood-group inspirations of that best of all institutions, the American home, as we of the older generation understand it. Even in the better homes there is little of the old-time definite moral training. Father is too busy; mother is too much

"cumbered with many cares," bridge, suffrage, missionaries, to attend to it.

Even the church does not and under present conditions cannot cover the field. It is sufficient to note the vast numbers of families that never go to church. Certain large and populous organizations regard the church as in the main hostile to their interests. Unjust as this attitude is, it yet excludes the members of these organizations and their families from the moral training offered by the church, — which is our only point here.

The school, on the other hand, is universal in its reach. Practically all children come under its influence. Hence those who see the great gaps left by the older agencies more and more look to the school to fill them.

Certainly, if we have not some agency, to train the youth to lives of virtue, we are in a parlous state. Matthew Arnold's oft-quoted remark that "conduct is three-fourths of life" seems rather an understatement than an overstatement. Conduct really is practically all of life, the sum and the flower of all attainments, all growth, all experience, and if, after years of training in school, in the home, and in society at large, boys and girls in large numbers are immoral, or even unmoral, in their conduct, something is altogether wrong. If the old agencies fail in this respect, some new agency must be found, or civilization is doomed. All this, however, merely states the problem and helps very little in its solution.

Fundamental Questions. — Certain fundamental questions must be answered unless we are to blunder along in the familiar American way:

First, what do we mean by morality?

Second, how far and by what measures can youth be trained to morality?

Third, what is the function of the school in giving such training? How far may it go, safely and legitimately?

Fourth, the above questions being determined, how are our schools, as at present manned and organized, to go about the task?

In a single chapter, naturally, it is impossible to give more than brief answers to these questions.

Distinction between Morals and Morality. — The first question involves a fundamental distinction too commonly ignored by those people who call for courses in moral training, with the calm assurance that they are sufficient to make children upright. I refer to the distinction between the principles of conduct resting upon a foundation of character and a superficial conformity to conventional moral standards. This distinction, which may be called that between morality and morals, is not imaginary. It is real. Many a person is conventionally moral, even "pious," who yet lacks moral principle or true morality. The occasional lapses into open dishonesty of people of this type simply show that although there was outward conformity to convention, there was no real morality, no real antagonism to wrongdoing, and when temptation arrived, moral disaster followed.

This is quite different from hypocrisy, or the conscious doing of wrong while professing right. It goes far deeper than that. These people have believed themselves good, just as others have believed them good, because they conformed to the prevailing code of morals. They did not themselves know that they were bad at heart. A part of the trouble at least was in their alleged moral training.

They had been trained to believe that goodness consisted in obeying rules.

On the other hand, some of the greatest and best have openly and purposely defied the moral conventions of their times. Jesus shocked the conventionally good people of his time by breaking the Sabbath laws and in many other ways. Perhaps his greatest battle was against the confusion of morality with conventional morals. The Pharisees, who received his keenest shafts, were not worse than other people. They were simply the conventionally good, who cared only for the "outside of the cup and platter." The bearing of this distinction upon the subject in hand is simply this, that most of the moral training suggested for schools has to do solely with externals. It looks toward conventional morals and not toward fundamental morality. Let me say here that I am not attacking conventional morals. For the average person there is no safe course open other than to follow them. It is only for the prophet or the wise independent thinker to modify them. But they are not to be confused with the real thing, which is sound character.

Essentials of Morality. — The essentials of morality are properly cultivated feelings, leading to wise choices, a will trained to make such choices in obedience to right feeling, and sound moral judgment as a guide to action, the balance wheel of conduct; in other words, a well trained controlling conscience approved by moral judgment. If moral training is really to accomplish the desired results, it must aim at this higher goal. Otherwise the training, however elaborate and extensive, will do more harm than good, because, while it may develop a certain

superficial conscience, it will surely pervert the judgment and cultivate pharisaism.

Possibility of Moral Training. — Second, to what extent can youth be trained to right conduct, and by what agencies available to the teacher? Certainly not by any mere catechetical method or by any system of instruction in the conventions of society. This does not mean that such instruction is not of value. It is more than that. It is absolutely necessary, but it is insufficient for the securing of good conduct. As conduct is practically all of life, it is the outgrowth of life, and the only adequate training for it is a good life. That is, the subject is all-inclusive.

In answer to our question, then: No doubt, if we could entirely control the environment of a child from infancy, could see that just the right forces worked upon him, that he put forth his activities in just the proper directions and degrees, we could train him to good conduct with almost certain assurance. Such a training, however, would require not merely omnipotence, but omniscience as well. Still, in spite of the inevitable limitations of school life and environment, much may be done toward the right kind of moral training. It can be done in any school and with any children, even the worst, provided the teachers rid themselves of the notion that knowledge is sufficient, especially knowledge couched in general terms, such as proverbs, wise sayings, commandments.

Ten Commandments Negative. — It is interesting to observe in this connection that the ten commandments of the ancient Jewish law, invaluable as they have been in the history of the moral evolution of the race, are, with

a single exception, negative; all but two begin with "Thou Shalt Not," and one of these two, the one relating to the Sabbath, is almost wholly prohibitive in character; the sole exception is the commandment in relation to the treatment of parents. Hence, it will be seen that the ten commandments give little impulse to the higher moral nature. They are useful in the childhood of the race or of the individual, but their usefulness disappears before the rising of the true moral sense. This weakness was recognized by Jesus, who supplemented the ten commandments by the two positive commands so full of meaning, — "Thou Shalt Love the Lord Thy God" and "Thou Shalt Love Thy Neighbor," which express briefly the spirit of the higher modern civilization and the hope and ultimate end of moral development. They are commands to be obeyed, not in specific acts leaving a sense of virtue, but in the whole of life. They are of the essence of morality, and not its mere outward manifestations. As they take hold upon the moral nature the need for prohibitions disappears.

Need and Dangers of Prohibitions.—In training youth, undoubtedly prohibitions are necessary. The earlier stages of moral development require restraint from without, but to stop with these is to arrest the development of the character, and arrested moral development, which is much more serious than arrested intellectual development, is also more common. It is shown in devotion to forms and to ceremonies of all kinds, from which the individual gets the feeling of self-complacency from virtue achieved, of superiority over his less virtuous neighbors, and of safety from the infliction of punishment, and all without doing any really virtuous act.

Still, as has been said, inhibition must come into the moral training of children, especially in its earlier stages. They must be told not to do a great many things, but this only until they can be led to appreciate positive motives. The ultimate effort always must be to lead them into a virtuous habit of thought and feeling, so that good conduct will flow naturally and habitually from the fountains of the moral life itself.

Order of Procedure in Conduct. — At this point it is necessary to consider briefly what may be called the order of procedure in all conduct, and it is to be feared that we must abandon at least the extreme views of the transcendental will as advocated by Hegel and his followers, notably the late William T. Harris, United States Commissioner of Education. While we no longer regard the faculties of the mind as existing in separate forms, — the intellect, the feelings, and the will, — still this old division represents well enough the mental processes that lead to conduct, and these as outlined by Mark Hopkins still hold, even with the newer psychology.

In the normal mind, and under ordinary circumstances, conduct begins with knowledge, which leads to feeling, which leads to choice. The feeling necessarily follows some action of the intellect. There must be some knowledge before there can be feeling. The action of the will, the choice, inevitably follows the feelings; the feelings supply the motive to all conduct. The will cannot act without motive; we cannot help choosing the action the motive for which is strongest with us. Willie is left at home alone. His mother said to him before departing, "Willie, don't you touch that jam on the pantry shelf." Willie likes jam. He also likes

to do what he has been told not to do. Will he take the jam or will he not? It is purely a question of strength of motive. On the one side is his love for his mother, his fear of punishment if he disobeys, and whatever of conscience has been developed in him; on the other is his love for jam, and his bravado. If the former set of motives is the stronger with him, he will let the jam alone. If the latter is the stronger, then it follows that he must take it. He cannot do otherwise than obey the stronger motive. This is an epitome of the process in all moral acts, — Cæsar at the Rubicon, Judas before the Elders, John at Runnymede, Father Damien looking to the isle of lepers, Aaron Burr at West Point. All these made choices, and in every case obeyed the motives that were strongest with them, and they could do nothing else.

Harmonizes with the Bible. — While, as has been said, this does not harmonize with the extreme view of the transcendental will, it does harmonize with the teachings of the Bible. "As a man thinketh in his heart, so is he." To think in the heart is to feel. "Keep thine heart with all diligence for out of it are the issues of life." So, we see, the doctrine is in full accord with the best that we know as to moral training, and it furnishes a key for the teacher who would lead children to habitual right conduct. It is the basis, in other words, of morality rather than of conventional morals. How then can its principles be inculcated.

How to Inculcate Principles. — Take the order of procedure of conduct as above given. Knowledge must come first, and here is the first great danger of slipping into the easy rut of formality. The knowledge must be

vital and not merely verbal or formal. It must be of such a sort as to rouse the right kind of feelings.

Authority Insufficient. — It is not enough that the child know that some one has said, "This is right, that is wrong." That is the old deceptive way of authority, the basis of tyranny, ecclesiasticism, persecution, superstition. "I am authority. It is my function to tell you what to do. It is your duty to obey. Obey and you go to Heaven. Disobey and you go — elsewhere." This is the religion of all tyrants, whether ecclesiastic, monarch, political boss, parent, or teacher. It mistakes obedience, the necessary but temporary support of the morally immature, the crutch of the morally lame, for the rock on which character rests. Still more feeble and deceptive is the apparent knowledge given in proverbs and moral sayings, which are at most but partial truths and sometimes not truths at all. Mark Twain once said, "Even a proverb may be true." One at times is almost ready to think that Mark Twain exaggerated. The smug satisfaction of the small mind continually quoting "Honesty is the best policy," "Early to bed, early to rise," "Spare the rod and spoil the child," and the rest, not only is ludicrous, but it stands in the way of true moral growth, and yet many advocates of introducing moral training into schools in their suggested plans rise little above Sancho Panza, the greatest of all authorities on pregnant sayings.

There is a special danger in proverb-fed opinions, the danger that exists in all half truths. The child who is told that honesty is the best policy, and then finds that it is not, — that is, that as a business policy it fails in at least a large number of cases, that many of those who

make the largest fortunes make them in violation of honesty, or at least in suppression of it,— this child is quite likely to believe that his whole moral code is wrong. He is like the child who, discovering that he has been deceived in regard to Santa Claus, questions the existence of a God.

Knowledge of conventions of whatever sort, whether based upon authority or upon accepted sayings, is a feeble reliance for character. It is true that a certain amount of conventional knowledge must be given. Children must know what they should not do in the ordinary relations of life and what they should do, as viewed by their associates and elders; that is, they need those of the ten commandments that apply to modern times. But this knowledge is merely for convenience, or to help over the stage of moral helplessness.

Knowledge of Principles Needed. — The knowledge that is needed is, first, a knowledge of fundamental principles, because every law of right must go back to these. Morality is altogether social. The validity of its laws rests entirely upon the relations of man to man, and every moral maxim must be referred back to its social motive. It is contended that children cannot understand the reasons for conduct and hence must be guided wholly by authority. This is true doubtless with very young children and to a certain extent with older ones, but to a far less extent than most believe. The fundamental principles of ordinary human conduct are so simple that children can understand them. It is not enough to say to a child, "Thou Shalt Not Steal." It is necessary and very easy in addition to this to show him why it is wrong to steal. The relation of parent to

child is one that is often puzzling, and merely saying to the son of a drunken profligate or brute, — "Honor Thy Father," is not likely to prove very impressive. But it is possible to make the child, even of such a parent, understand the sort of obligations due. The plan of those who would teach in school abstinence from the use of liquors is the correct one. It aims to acquaint children with the effect of the use of alcoholic stimulants upon life, and claims to be scientific. The validity of the principle is not affected by the fact that in too many cases the method is badly applied and exaggerations are indulged in which lead children later to reject all the teaching on the subject.

Knowledge must Rouse Feelings. — The kind of knowledge given for moral purposes must be the kind that rouses good feelings, because feelings, as we have seen, are the key to conduct. Bare statements of moral obligations do not necessarily appeal to the feelings, and consequently slide off the well-oiled conscience of a child without resulting in conduct. This applies not merely to the character of the knowledge given, but to the method of imparting it. The aim of all instruction in morals must be to stimulate love for right doing and hatred of wrong doing, and to make such feelings habitual; that is, to develop the right kind of conscience, for conscience is merely a habit of feeling.

What is meant by vital knowledge and knowledge that stimulates feelings will be discussed more fully a little later when considering the specific work of the school.

Knowledge Insufficient. — Knowledge alone, whether of maxims or of principles, is an insufficient reliance for

those who would train the young to right conduct. There are really very few who do not know what is right and what is wrong under ordinary circumstances, and some of the worst offenders against moral law are to be found among the most highly intelligent, even as to moral principles and the results of courses of conduct.

Influence of Environment. — Vastly more important than all instruction is environment, the moral atmosphere in which a child lives, the motives that are regularly presented for conduct in the ordinary commonplace affairs of life, for it is not upon the unusual, the extraordinary, experiences that for the most part character is founded. Especially important is the prevailing sentiment toward people and toward conduct that rules in the life around the child. An atmosphere of sordidness and selfishness in the home is pretty sure to make the child as he grows up sordid and selfish, while habitual altruism, consideration for others, pride in integrity, if found in the home and the other daily associations of children, furnish the strongest reliance possible for the development of good character along these lines.

What is frequently assumed to be inheritance can readily enough be traced to the controlling influence of environment from infancy. If we could make sure that a child lived in the midst of the best influences steadily, we should have the best assurance also that he would grow up good, provided however he had sufficient opportunity for self-development — and for battle; for good environment alone, involving complete protection from evil, is pretty sure to lead to moral breakdown later. Rasselas was so protected. But in real life such

complete protection is impossible, and perhaps fortunately. A good home, however, is not impossible, to serve as a refuge after the battle, and, before it, to supply the child with the armor of self-confidence, right feeling, good motives, and strong determination. This is the ordinary reliable moral training.

The Great Exceptions. — There is one class of exceptions so important that they must be considered. Life does not always run along smoothly and regularly. Unusual experiences come to most people, and in many lives such experiences seem to be controlling. There is a force mightier than habit due to regular environment, which often upsets the well-laid "plans of mice and" parents. It is due to the psychological truth which we have explained, that the motive of conduct is in the feeling. Strong, sudden feelings, roused by some wholly unexpected influence, may throw to the winds apparently all the effect of good or bad environment. A violent appeal to the passions, a tremendous and dazzling and overwhelming temptation, exhibiting as the reward of wrongdoing "all the kingdoms of the world and the glory of them," may rush to sudden ruin the man or woman who has lived a normal and orderly life without any suspicion of such possibilities. On the other hand, inspiration, a sudden appeal to the better feelings, may completely reverse an evil course and redeem the wrongdoer. Such extraordinary changes are not uncommon. We see the drunkard reformed at a temperance meeting where his feelings have been greatly roused. We see the thoroughly bad man repentant and revolutionizing his life at a religious revival.

Religious feeling is doubtless the strongest of the

motives that can be used for reform or for setting young people on the right course. The McCauley Mission in New York is complete evidence of the power of such appeals. The work of the revivalist of the past generation, while often futile and misleading, rested upon the sound foundation of the value of inspiration.

Still these extreme cases of sudden turning to good or evil are rare for the ordinary boy and girl. The development of moral character is usually continuous and due to environment, the regular daily habit of life, and is influenced mainly by society, the society of elders, the society of those of like age, and the society of books.

Function of the School. — Third, having before us the above outlines of what constitutes moral character and what moral training is, and what are the main influences to be relied upon in the development of character in the young, we must consider briefly the school and its possibilities in this direction.

The school is just a part of life. It is an institution, with well defined rules of conduct and schemes of work. The influences that affect the moral development of the boys and girls in school are not different in kind from those that affect it outside the school. The variations are merely those of a particular institution. In school children live a normal institutional life for a limited number of hours daily, in personal contact with at least one mature mind and with a larger number of equal age. The character of this life is determined partly by the character of these associates, partly by the work to be done, and partly by the motives of conduct appealed to. The school is an institution whose chief manifest aim is instruction; consequently it would seem natural

that here instruction in moral principles and maxims should be given. But, as has been said, the school is not merely an institution for instruction. It is a large part of the life of the child, and hence it is a place where, in addition to instruction, feelings should be cultivated, motives developed, and conduct regulated in obedience to the best motives, thus evolving conscience, or a correct habit of feeling, and also moral judgment, — the two sources and regulators of conduct.

What then can the school do? It can first, and chiefly, give the child a wholesome environment, a normally good and morally stimulating atmosphere, good society, — in short, a good life. There is a certain danger in excessive moral instruction, the danger of causing the child to separate morality from life. Unhappily a very large portion of the religious instruction given children tends toward this danger. They get the notion that the experiences that count for goodness, especially in what is known as salvation, are quite apart from the daily life, and that by performing certain rites they secure to themselves immunity for unsocial, and hence immoral, conduct. The counteracting influence for this is a life and an environment wholly moral.

The Teacher. — The first element having moral bearing in the life of the school is the teacher. It certainly is not extreme to say that with a teacher fundamentally immoral, that is, with wrong social ideals and with wrong notions as to the relation between convention and morality, that with such a teacher a school cannot be other than an immoral place. But on the other hand, association by children with a pure-minded, high-minded man or woman, who directs the occupations, sets the standard,

and becomes the ideal of the children, cannot but be moral. The best teachers in the moral sense might be quite incompetent to give in detail much moral instruction, and those competent to give such instruction might be, as moral influences for the children, among the worst. The teacher who bosses, who scolds, who stirs the evil passions of children, even though securing "perfect order," and teaching the facts of the curriculum unerringly, is necessarily a bad moral influence. The teacher who radiates love, whose life in the school shows devotion to principle, to work, and above all to the children themselves, even though defective in many ways, cannot, from the moral standpoint, help being a good teacher.

Moral Atmosphere. — It is to the teacher that the school owes what we know as its atmosphere. On one occasion some teachers were gathered on invitation in a house near a school to view a pyrotechnic display. Two little children, attendants upon the kindergarten, were quietly playing about the room and watching the gorgeous play of colors. Suddenly in the silence the teachers were startled to hear a childish voice say, "Oh, thank you, thank you, for making the world so beautiful." The principal endeavored to find the source of such general gratitude, and discovered that it was in the kindergarten, at whose head was a woman of the loveliest character, radiating gratitude and consideration for others continually. In other words, they had breathed the moral atmosphere of a school whose motive was love, and whose teacher was its ideal.

Work and Motives for Work. — Next to the teacher the most potent influence in determining the moral in-

fluence of school is the work done, with the motives presented for it. Work with most people is the key to life and conduct. Our moral status is determined very largely by the work we are engaged in, and especially by the motives that we set before ourselves for doing work. The complaint is very common that our people have low aims, — to make money for money's sake, or to get power for power's sake, — that the effect of the life work of the average man or woman is to develop, increasingly, selfishness. Is it not true that the beginning of such degrading tendencies is made in too many cases in school? The child who is led to study for marks or prizes, or to avoid punishment, is on the road to a low standard of living. The child who works to please the teacher, or father or mother, is working from a much higher motive, and is getting a much better habit of life. The child who studies that he may use his acquired knowledge in some half-realized ideal life is working from the highest motives and is on the road to altruistic living. Children should work with an ever increasing sense of power and with determination to do their best, but not with any feeling of petty rivalry or hope to secure advantage over other pupils. They should "work for excellence rather than to excel."

Coöperation, not Solitude. — The method of conducting the school work should be such as to develop a spirit of coöperation. The artificial and unnatural solitude of each child in the average schoolroom is immoral. The children should all feel that the recitation is a coöperative exercise in which they are not trying to show off what they individually have learned from a book, but are each contributing his best to the general

store from which all draw, so that at the end of a recitation every child will have done something for the common good, and will be richer himself for having performed a social duty.

Discipline. — The third moral influence of the school is what is known commonly as "school discipline," meaning the preservation of order, of silence, and the conserving of the institutional life of the school. To many it may seem that this should come first. But it seems to me that the order of the school should first grow out of the teacher's personality, and second, out of the work done. The chief moral value of formally kept order in the school is in training the child to give proper heed to the conventions of any institution to which he may belong.

Importance of Conventional Conduct. — From what I have said I do not wish at all to be understood as opposing the value of conventional conduct. Good manners are good morals to a degree. The rules of social life are in the main for the preservation of individual rights and for making easier the common happiness. This gives them high moral value. Every institution has its conventions, which are at least supposed to be important to the institution and to those connected with it. There is a certain kind of conduct suitable for the church, another for the theater, another for the home, and still another for the school. These conventions may have only a temporary validity and may not extend beyond the bounds of the institution itself. Still, to obey them while in the institution tends to cultivate the habit of consideration for others, on which they are based.

The school has many conventions, some of them un-

fortunately not even useful to the school itself, and most of them having no application to life outside the school. Manifestly the number of such conventions should be reduced to the actual necessities of the school, and obedience to them should be based upon the fact that they are good for that particular institution, and therefore for the pupils, who both belong to and own the school, and hence that such obedience is moral. The mistake of many advocates of moral instruction in school is that they have confused the conventional conduct of the school with morality itself, and fail to see that the sole moral value of such conduct is in establishing the mental condition required by institutional life in general.

School Virtues. — Even certain great leaders, notably Dr. William T. Harris and Dr. E. E. White, used to claim that the schools were great moral agencies because they taught the school virtues, chief among which were silence, obedience, punctuality, and neatness. Now these are, to a degree, no doubt, school virtues, but their application to life outside of the school is extremely limited, and their chief, if not their sole, value rests upon that fact that they are good for the school, and that children should do what is good for any institution to which they belong.

Let us consider them briefly:

Silence. — There are doubtless occasions when silence is a real virtue. Many a man afflicted with a talkative bore realizes that. But certainly there are many occasions when it would be a cowardly vice, and even in school it has been pushed to harmful extremes. Stillness usually indicates not industry, but the opposite. The corpse observes absolute silence. To make much

of silence as a virtue inculcated by the school is to show a lack of sense of moral values.

Obedience. — Consider obedience. It has a wider application than silence, and is in many cases a genuine virtue, but in modern life and in democracy obedience to the inner moral law is vastly more important than obedience to the outer law of convention. Authority has lost its power in the world to a very large extent. The person who obeys unquestioningly may be doing right, he may be doing wrong. No adult capable of reasoning upon moral questions should obey unquestioningly except in minor matters of conventional routine. The boss, whether political or pedagogical, demands unquestioning obedience, not because of its moral value, but because it is personally convenient to him and his purposes. The training of the school should develop questioning obedience rather than unquestioning obedience. Moral questions occurring for the first time should be submitted to a trained, broad, moral judgment. When that has rendered its decision, it should so appeal to the properly cultivated feelings that the will will obey without hesitation and as from habit.

There is a moral law within to which obedience must always be rendered. There is a conventional law without to which obedience should be rendered when it does not conflict with the law within, but not otherwise.

There is another condition that has an important bearing on the value of obedience as a virtue. Continual reliance upon the will of another is weakening. The boy or girl who has been simply obeying the behests of a superior unthinkingly, although his conduct may have been perfectly regular and proper, is likely to lack moral

judgment and strength of purpose. His life has done nothing to give him the power to discriminate. Hence the exaltation of obedience as the great school virtue may develop moral weakness. It certainly furnishes slight basis for confidence in the future welfare of democratic society. Respect for law, as representing the composite will of the community looking toward general good, is something to be cultivated with the utmost care. It is a little different from respect for laws. It is very different from obedience to arbitrary commands, such as the pedagogical boss expects from his school.

Order there must be in school, but an order that springs from an appreciation by the pupils of the fact that the school is a social institution belonging to them, that it is for the common good, that they are responsible to their own consciences as well as to the board of education for maintaining the institution upon a plane consistent with its high purpose. The degree of order required to accomplish best the work of the school, to enable each individual to do his business efficiently, can easily be maintained if the students are led to realize its importance to themselves as well as to others. There is always danger that enforced order will come to be worshiped as an idol, and this, like all substitution of lower ends for higher, is morally debasing.

Briefly, the order of the school should grow out of obedience to the commonly recognized needs of the school as voiced by the teacher, in whom the pupils have confidence, and as understood by themselves.

Punctuality. — The third of the vaunted school virtues is punctuality. Little need be said upon this. It is evident that it is an economic rather than a moral virtue.

It has certain relations to what is called success in life and at times has a moral value because of its effect upon other people. It is desirable, of course, and to a large degree necessary to the well-being of the school as an institution. But it can easily be over-emphasized. Children not infrequently will stay away from school altogether rather than come tardy and face the angry teacher. They will come to school without proper food and without proper care of the body rather than be late. One may say that all that is needed here is common sense. But common sense is not so very common, and the exaltation of an act of minor economic importance into a moral virtue produces distortion of vision and lack of sense.

Neatness. — The fourth standard virtue to be urged by the old-time moralist was neatness, — neatness of person and neatness of work. Neatness is of great value. It is a hygienic virtue, and it is also an economic virtue. Indirectly too it has a moral value. Still it belongs in the field of petty accomplishments with which the small mind satisfies itself of its own greatness. When urged in school, as it must be, it should be for reasons clearly expressed relating to the general good.

Evidently these four school virtues, which our elders thought were the great moral contribution of the school to the development of the child and of society, are hardly big enough under democratic conditions to deserve all this praise. Admitting their very considerable value, the school must develop virtues of a much higher sort, or it will not be the safe reliance that it is supposed to be.

School a Life. — This brings us then clearly to the heart of the matter. School to a child is a phase of life, a very important and often a controlling phase. It is an epitome

of life itself. That which gives it moral quality is that which gives moral quality to the life of the child's parents; namely, motive following sound judgment and leading to conduct. The controlling influences are the same, which are chiefly society and literature as sources of ideals, and occupation, modifying, directing, and controlling, to a very large extent, the ideals, and hence the motives and the conduct. Besides its general character, school life is also life in an institution, which makes it an even more complete epitome of the larger life.

Occupation. — In order that this school life may have the highest moral value, the occupation must be recognized as worth while; it must be pursued for worthy motives, and the conduct of the child must be regulated so as to further the pursuit of the occupation.

Society. — The society must be such that the child receives from the teacher the best model possible for himself; from his fellow pupils, help, encouragement, and stimulation toward right doing.

Pupil a Contributor. — Most important of all, his life in this society must be not that of a mere recipient, but also that of a contributor. The one lesson of overwhelming importance for every child in school is that the school is a society, not only to which he belongs, but which belongs to him, and that it is an important factor in his life, that his business is not merely to learn his lessons and get the most possible from school, but to contribute both in personal conduct and in influence the best that he can toward making the school a good place for all. It is the world in little, and there is no better place to be found, unless it be the ideal family, for de-

veloping the sense of responsibility for the common welfare than a good school.

Altruistic Schools Possible. — Unhappily too many schools fail wholly to cultivate this highest virtue of altruism and devotion. The teacher controls. The motives presented to the children are selfish; at the worst, to win prizes or marks, or to avoid punishment; at the best, to get knowledge. But schools upon the higher plane are not unknown. If the personality of the teacher is right and he understands his business, they are not hard to get. And besides, in such schools, along with the higher ideals and the better training, through the marvelous law of compensation, the children learn more and acquire more power.

Illustrations. — There is not space here to give in detail a scheme for developing moral responsibility in school, but every teacher who grasps the spirit can work out his own scheme. Illustrations worthy of notice are such institutions as the George Junior Republic, where even social delinquents are made socially responsible by being forced to carry responsibility. Another good illustration is found in the self-governing school, frequently in the form of a school city, by which large numbers of children, many of them of foreign birth, are trained to that standard of good citizenship that makes more of duty than of privilege. For the basis of good citizenship is, not chiefly obedience to the external law, but rather obedience to the internal law, the law of love, whose motto is "It is more blessed to give than to receive," and this can be inculcated in school.

As has been said, the above constitutes the most important possible contribution of the school to the moral

education of its pupils, — living a good life for worthy ends earnestly pursued in good society, actuated by the spirit of the true citizen, feeling the responsibility for the general good, and contributing their best to it. This, more than instruction, develops moral judgment, rouses right feeling, stimulates worthy motives, and leads to right action, and hence it is the great function of the school from the moral point of view.

Moral Instruction. — How to give wisely definite instruction in morals is a very hard question. To give instruction that shall be directly applicable to life, that shall not seem to make a separation between morals and conduct, that shall not tend to make prigs and pharisees, is no easy matter.

Attempts at Courses. — Various attempts have been made and courses outlined, but none that I have seen have been more than partially satisfactory. Perhaps the best is that used at the Ethical Culture School in New York City. This contains many excellent features, and teachers interested would do well to obtain a copy. In my judgment the course is as yet too mechanical, too catechetical, and falls short of the kind of knowledge that rouses feeling and develops motive. The best that it does, it seems to me, is to help in the training of moral judgment, and that is excellent. It is good as far as it goes.

A course has recently been issued by Professor Sharp of the University of Wisconsin and Professor Neuman of the Ethical Culture School of New York, for use in high schools. This is an easier undertaking than to provide a course for elementary schools, because the pupils are older, more capable of reasoning, and are at the period

of second birth, when they are reaching out eagerly for ideals. This course has many excellent features, and is certainly worth study by any teacher planning to give instruction in morals. The first-year work is perhaps the best, in that it aims to stimulate motives and create ideals. The courses for the later years, though having many excellencies, fall short in this respect and seem rather mechanical. Their chief aim apparently is to develop the moral judgment, and that, as said above, is good as far as it goes.

General Course Impossible. — I am not sure that a general course for the use of teachers in elementary schools is possible. At least none has yet been offered that is satisfactory.

Possibilities of the School. — What can the school as at present organized and manned do? The first difficulty is in the limitations of the teacher herself. Our teachers as a class are of the highest quality morally. I doubt if any other body of people in the world have as high moral ideals as the teachers. But in this country a very large majority of them are young girls of immature minds and limited experience, hardly capable of grasping the great moral questions of life so completely as to fit them to impart them again. The most that can be expected of these young people is that they shall teach the children in a simple way the plain conventional moralities, and with the little children that is perhaps enough. They can teach them the school virtues of promptness, obedience, neatness, and silence. They can tell them to keep their hands and faces clean, not to use bad language, to be polite, and all the other common and necessary forms of virtuous conduct for children. But even this cannot well

be done systematically. It must be done upon occasion. The time to teach a child to be clean is when he is disposed to be dirty, to teach him to obey is when he is inclined to be disobedient, to emphasize punctuality is when there arises a tendency to tardiness, and to teach the importance of silence is when he is disposed to talk too much. The watchful teacher will take advantage of the opportunities that rise continually in school to impress these simple virtues, and by so doing will impress them much more effectively than if she takes a book and on Monday teaches silence, on Tuesday punctuality, on Wednesday obedience, on Thursday neatness, reviews on Friday and repeats next week.

Value of Discussion. — The wise teacher will not only teach these things as occasion arises, but she will not rely wholly upon authority for inculcating them. She will talk over with the pupils instances, real or imaginary, which illustrate what she would teach, will encourage them to discuss among themselves why children should be on time and should be clean and should obey the rules, and should not talk when others are talking or when it will disturb those who want to study. In this way she will cultivate their moral judgment; and also by putting emphasis upon the rights of others, upon the harm that the tardy pupil and the disobedient pupil and the dirty pupil and the noisy pupil do to others, she will develop the social sense and the sense of obligation for the general good. Any good, bright girl fit to be a teacher can do these things. But if you put into her hands a catechism and instruct her to teach fundamental morals from a book she is likely to break down. The difficulty increases as the pupils advance in age, are

better able to reason, and need more and more to understand the underlying principles. Very few teachers are competent to do this work as it should be done.

Lack of Material. — Here begins the need for books and other means of instruction, and here again we are up against a blank wall. There are no books and there are no means of instruction, excepting such as are furnished by occasion or may be adapted from other uses, and as I have said, there are no courses of study that more than approximately cover the field. The Bible, which would be altogether the best textbook under present conditions, cannot be used, strangely enough, not because of opposition from atheists or agnostics, but from the very people who are clamoring for religious instruction, — apparently because they fear that some church not their own will catch the product, and it is better to let children grow up in ignorance of the Bible than to have them join any other church than " ours."

Religious Instruction Impossible. — Religious instruction is out of the question. It is not necessary to discuss its value here, because under the constitutions of our nation and states, and especially in view of prevailing sentiment, it cannot be given in public schools. Doubtless, too, that is wise, because the teachers are very few who could teach religion divorced from sectarianism. (It is much easier, and hence much more common, to teach it divorced from conduct.)

Conduct, Individual. — Further, it is by no means certain that a general course in morals, even if ideal, would accomplish the good hoped for. Conduct is so largely an individual matter, environment creates such particular needs, that it is not certain that the instruction

given should not be specially and locally adapted. The great foundation principles of love, of the duties that we owe to others, of devotion, of self sacrifice, of democracy of spirit, naturally should underlie all instruction, but these cannot be imparted by instruction. They must appear in life, and in so far as they appear in instruction, they must be simply the spirit and the inspiration.

Use of Stories and Poems. — Perhaps the easiest way to produce the desired moral impressions is through literature, — poems and stories, both fictional and real, adapted to the children's needs, with the moral not stated, but implied. Stories of heroism, stories of sacrifice, stories of nobility of conduct, stories of the struggle of great men to achieve places of usefulness, tend to rouse and foster ideals. Such stories in the first place should not tell of virtue rewarded and vice punished. We have had altogether too much of "Honesty is the best policy," "Be good and you will be happy," and "Murder will out," — time-worn lies that vitiate the moral sense. Moral training must rest upon other grounds than the hope of reward or the fear of punishment. It must grow out of ideals and feelings leading to conduct itself and not considering either the price paid or the reward sought.

Models should be Great Servants. — The men whose names are used as models should be those who have contributed rather than those who have simply got rich, — Moses who gave up life at court to help his people and was great, not because he was their general, but because of his sacrifice for them; Jesus, whose whole life was sacrifice; the apostles and missionaries to the western world; among the explorers of this country, not Cortez and the others who sought riches, but the priests who

came to redeem the savages; among Englishmen, not Wellington and Nelson, but Howard, John Bright, and Gladstone; among our own people, not our successful multimillionaires, but Washington, Lincoln, Lee, John Eliot, Dr. Lazur, and Dr. Blue.

In the field of fiction we should have optimistic stories showing the same spirit. For young children, the Fairy Stories of Grimm are mostly objectionable, because they are immoral, while those of Andersen are excellent.

Principal should Prepare Local Course. — But, as is evident, this is all indirect instruction. How can we make it direct? Chiefly by discussion with the class. My suggestion is that for the present at least each school principal interested in the subject prepare a course suited to the children of his locality, talk it over with the teachers, select suitable literature to illustrate the virtues that he thinks the children most lack; and if necessary prepare outlines for the grades, simply to be used as guides by the teachers in talking over the stories with the children. The stories in all cases should be such as to rouse a feeling of admiration for the one possessing the virtue, which should be transferred into a love for the virtue itself, the latter by discussion. All such discussion should be free, though carefully guided by the teacher, and under this guidance the thought of the children should be taken back constantly to the underlying principle of all morality, love for others, and a desire to lend a hand on all possible occasions.

In this way in the towns and cities a great deal of valuable material would be gathered, and at least the beginnings made, of a course of instruction in morals.

Naturally those who were working out such a course would want to confer with others doing the same thing, and the result would be a consensus of opinion and in time a certain degree of harmony in material and method, which would take the moral training of the children in schools out of the haphazard class and make it definite and purposeful, though not fixed and mechanical.

Rural Schools. — In the rural schools and the near rural schools, where generally there is little supervision, each teacher will have to do what she can, and here is where a good textbook, if a good textbook is possible, would do the most good. But even the rural schools have a certain amount of supervision in most cases from the county superintendent, who could outline a course affecting rural conditions which the teachers could use.

Necessity for Empiricism. — It is true that this is all empirical, but it is only by such empirical work that we can hope to arrive at results at all satisfactory or even permanent. The committee that starts out now to make a course of study for formal instruction in morals can do nothing more than follow precedent, and is very sure to be at the end far away from the lives of the children, but a local course growing out of an appreciation of the needs of the pupils will be vital, and in the hands of a wise teacher very useful, and from many such courses some results may be obtained that will be of general value.

Conclusion and Résumé. — In conclusion, it must be apparent to any who have had the patience to read this chapter that it is the author's belief that the main business of the school in regard to the morals of children is to supply them with a good life, consisting of good occupation, engaged in for good motives, and pursued under

the stimulation of proper incentives; that the atmosphere must be pure and sweet and inspiring, the teacher "good society" for the children, and the social life of the school coöperative, unselfish, and for the common good; that through this life children may be trained to democracy, which in its last analysis is not a form of government, but is a state of mind.

The author further believes that formal instruction, while of secondary importance, is important, but under present conditions it is not possible to say just how it should be given. Religious dogma cannot be used. The catechetical form of instruction long ago ceased to exert much influence. There is little already prepared material for direct instruction available. There are no textbooks that are satisfactory, and it is doubtful if any can be made that will be of general use. The best course for the present seems to be for local centers to provide their own courses, relying much on literature and biography and upon class discussions of the stories and poems, with the hope that out of many such local courses, in time something of more general usefulness may be evolved.

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